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CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

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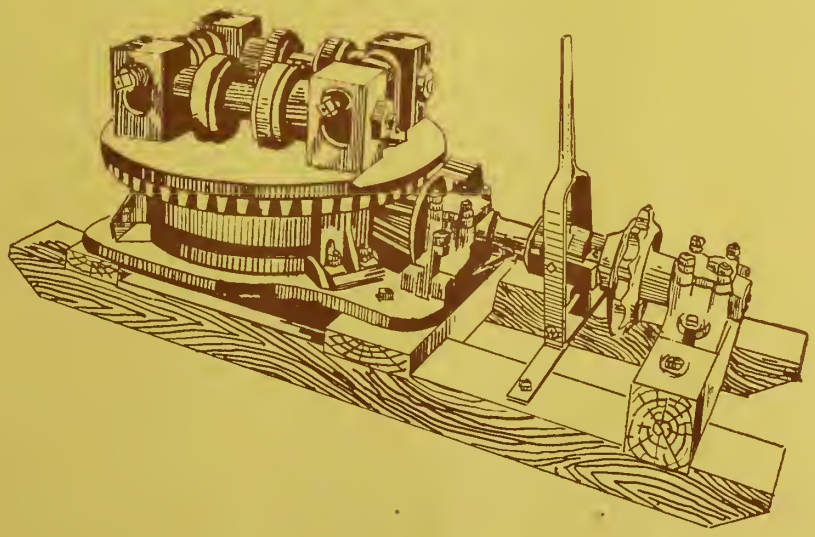

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California Derrick

Vol. 1 San Francisco, Cal., March 20, 1908 No. 1

REFINING OF CALIFORNIA CRUDE OIL

By J. C. Christensen, B. S.

Oil refining has been carried on in California since 1856, yet it is only within the last ten years that the industry has shown any marked increase, probably owing to the impossibility of producing a kerosene of good quality heretofore. Since kerosene constitutes about 30 per cent of the crude oil, it will readily be seen how important it is to properly refine this portion, not only to make the best profit on the operation, but in order that this portion may be disposed of at all; for the low fire test would preclude its use as fuel, and only limited quantities could be sold as gas engine distillate.

It was only with the publication of the Price patents in 1896, and the Starke patents in 1898 (now controlled by the Standard Oil Co.) that a successful method of purifying kerosene distillate became known to the public. Had it not been for the discovery of a successful method of refining kerosene, the author believes that the Standard Oil Co. would never have entered the California field as refiners. Previous to Starke's discovery, California kerosene was refined as well as possible and mixed with Eastern oil to make the cheaper grades of illuminants.

Kind of Crude Used.

In selecting an oil for the production of a complete line of products, the crude should be of the lightest gravity obtainable; and the distillate obtained therefrom should not contain more than one-half per cent sulphur (in the Kerosene portion): it should not lose more than 30 per cent by volume in the process of refining, and when refined should burn satisfactorily in any lamp. (The "Royal" and the old style "B. & H." lamps, especially the mammoth sizes, are the ones commonly used for this test.) Cheap and improperly refined oils will not burn in the mammoth sizes of these lamps unless the flame spreader—the cap fitting on the top of the central draught tube—is cut off so that it is brought nearer the wick. Even then the oil emits pungent vapors that affect the eyes. In the smaller lamps the cheaper oils burn more or less satisfactorily, but always with some odor. A properly refined oil will burn in any lamp with a full, clear flame without any appreciable odor; and the author has been unable to detect any marked difference between the burning qualities of the best California oil and Eastern oil.

For the production of asphalt exclusively, oil of the heaviest gravity is desirable and in practice oil over 16° Baume is not used. Consequently oil of from 16° to 20° Baume is not generally used for refining, but only for fuel.

The Refining Operations.

Distilling the crude: Two methods of distillation are in common use: so-called "continuous distillation" and "non-continuous" distillation. Since the latter is more easily understood, it will be described first. The crude oil 22° Be′ or over, is pumped into a still—a cylindrical iron vessel, which, in addition to the usual accessories of a boiler, is provided with perforated steam pipes laid inside and close to the bottom of the still, which may or may not have a dephlegmator (only two refineries on the coast have dephlegmators on the stills)—and heat applied. As the oil heats, the water which is always found in the crude, partially separates and is drawn off from beneath the oil. The light oil, called naphtha, distills off first and is usually run into a tank provided for it until the gravity of the distillate coming from the condenser is 54° Be′, when the distillate is directed into the engine distillate tank. As the gravity of the distillate approaches 55° Be′, the still gets the "rattles," due to the sudden formation and condensation of steam within the oil; and water begins to come over with the oil. The still must be carefully fired until the water is all "off," to prevent the crude oil from being carried into the condenser in the form of a foam. This foaming over is technically known as "puking." When water ceases to come off, steam—either direct from the boiler or superheated—is introduced at the bottom of the still by means of the perforated pipes before mentioned, in such quantity that the condensed liquids are in the proportion of one of water to twenty of oil. The steam serves to carry over the heavy oil vapors, thus preventing cracking, and also to partly desulphurise the oil. California oils cannot be profitably cracked—in fact, great care is taken to prevent cracking, as less acid refining is then necessary.

When the distillate entering the second tank—the engine distillate tank—is 48° or 47° Be′, according to the practice in the refinery, the stream of oil is directed into the kerosene distillate tank. When the distillate attains a gravity of from 34° to 28° Be′, according to the grade of oil to be made, or when the gravity of the oil in this tank is from 36° to 40° Be′, the stream is turned into a fourth tank until the gravity of the oil entering it is 25° Be′. This fourth tank contains the "gas oil" or "stove oil," which is used for making oil gas or for fuel. The fraction from 25° Be′ to about 12° Be′ is collected in a fifth tank, and is used for making lubricating oils. Much steam (up to 50 per cent) is used while the lubricants are distilling and the distillation is stopped when the residue in the still is of the consistency of hot asphalt: i. e., when a small portion drawn off and cooled can be chewed like gum; it should not stick to the teeth or become stringy. The residue in the still—asphalt—is drawn off into a closed vessel and allowed to cool. The still, after cooling somewhat, is re-charged. During the drawing off of the asphalt and the re-filling of the hot still both still and cooler are kept filled with steam to exclude air and thus prevent fire. To the best of the author's knowledge, no refinery on the coast uses a vacuum in connection with the distilling of lubricating oils and few refineries use superheated steam—two devices which no modern refinery should neglect. Pressure in the still should in all cases be avoided, not only on account of the danger, but also because cracking takes place much more readily under pressure,

In continuous distillation five stills usually comprise a battery, though some refineries have only three, while others have ten or more. The oil runs continuously into the first still, flows by gravity through the battery, and the residium runs continually from the bottom of the last still, through pipes cooled by water, into the fuel tanks. The first still merely serves to heat the oil and to separate the water therefrom. The gravity of the distillate coming from the second still is maintained at about 58° Be′ and consequently contains the naphtha. The gravities of the distillates from the third, fourth and fifth stills are 45°, 36° and 31° Be′ respectively, and all the distillate is run into the same tank to make the "coal oil stock." The gravities—excepting that from the last still—are of little importance, the stills being fired so that each evaporates about the same amount of oil. The residue from the last still is from 14° to 18° Be′ and is sold for fuel. No gas, stove, or lubricating oils are made by continuous distillation. "Bottom" steam is used in the last three stills.

While large quantities of oil can be cheaply handled in continuous stills, it is the author's opinion that the best results cannot be attained by their use, unless there are at least ten stills in a battery, owing to the cracking which must inevitably take place in the passage of the oil from one still to the next some 75° or 100° Fahrenheit hotter.

The distillate from some oils, notably those from the Santa Maria district, distilling below 32° Be′ tend to form an emulsion with the steam used in distilling, so that it is necessary to use very hot water to cool the condenser; for water separates more readily from the hot oil. Sometimes even this fails, and it is then necessary to treat the emulsion with acid, or to re-distill it.

The Refined Oils.

Gasoline and Benzine: That fraction of the oil called naphtha is run into the "steam still"—a still like the crude still hereinbefore mentioned, except that the vapor pipe is very high (15 to 30 ft.) and is usually filled nearly to the top with large pieces of quartz. This still is not heated by fire, but by means of steam introduced through the perforated pipe lying on the bottom of the still. The more volatile oils evaporate and pass up through the column of quarts to the condenser, while the less volatile portions condense in the column and fall back into the still. Thus the column acts not only as a fractional condenser, but also as a scrubber: the vapor being forced to bubble up through the descending liquid and being thoroughly washed thereby. The oils run from the condenser into different tanks, according to the quality of the products required. Usually gasolines of 70° and 65° Be′ are made, and benzines of 58°, 54° or 52° Be′. The steam used in the distillation removes much of the sulphur contained in these oils, and they are therefore often sold without further treatment; but when it is desired to produce "deodorized" gasoline or benzine, the products are given a final treatment in an agitator with either ordinary or fuming sulphuric acid, washed with water to remove most of the acid, with lye to neutralize the last traces of acid, and finally with water until free from lye. Some refiners treat all the naphtha with acid before distilling it in the steam still. The quality of California gasoline is much superior to Eastern gasoline of the same gravity, in that it evaporates at a much lower temperature.

The heavier oil, called "still bottom," which remains in the still after the gasoline and benzine have been separated, may or may not be treated with acid as described above, and is sold at "engine distillate," of which there are two grades on the market: No. 1 is about 52° Be′, and nearly or quite water white. No. 2 is about 48° Be′ and usually more or less yellow in color. The still bottom may also be added to the coal oil distillate.

Kerosene.

Starke's Process: The kerosene stock obtained as above is heated either in a still or agitator to a temperature of from 180° to 250° Fahrenheit and a small quantity of strong sulphuric acid (66° Be′) is slowly added, the oil being gently agitated meanwhile. When the addition of the acid is stopped, the agitation is increased somewhat and continued for from one-half to three-fourths of an hour. The acid combines with the impurities in the oil to form a black viscous liquid resembling coal tar, and is called "sludge." A few minutes after the agitation has been stopped, the sludge is drawn off from beneath the oil, from which it readily separates on account of its greater density. The treatment is then repeated from three to six times, using fuming sulphuric acid instead of the ordinary 66° Be′ acid. The oil is then washed with lye and water as described in teh treatment of benzine. The oil is now from 1° to 3° Be′ lighter in gravity, is usually of a greenish-yellow color, and will burn in any lamp. In order to make the oil water-white, and to secure the desired flash test, it is distilled again, using bottom steam, a small fraction being run into engine distillate if the flash test had previously been too low. The distillation is stopped when the distillate commences to show a yellow color—at about 31° Be′—or when the gravity of the oil in the tank is from 43° to 39° Be′. The cold distillate is then treated with a small quantity of sulphuric acid to improve the color and odor, washed with lye and water until perfectly neutral, and allowed to stand until free from water, when it is ready for market.

Another method in general use is the so-called "Canadian Treatment," which involves agitating the oil with a very strong solution of caustic soda (30° Be′) in which litharge has been dissolved—practically a solution of sodium plumbite—previous to the treatment in the cold, with either ordinary or fuming sulphuric acid. By keeping the oil cool while treating with acid, a good color is obtained without re-distilling. The sodium plumbite is supposed to remove the sulphur from the oil; but, as a matter of fact, very little sulphur is removed by it and its use might just as well be abandoned. Oils refined in this manner are of inferior quality.

A third method depends upon the use of sulphuric anhydride (mixed with other gases) as obtained in the manufacture of sulphuric acid by the "contact" process, said gases being passed into the oil, which is kept as cool as possible. The gases passing into the oil have the following approximate composition:

Sulphuric anhydride	3 to 5% by volume
Sulphur dioxide	3/10 to 1% by volume
Oxygen	8 to 12% by volume
Nitrogen	89 to 83% by volume

It will be noticed that a very large amount of gases having no action on the oil must be passed through it in order to utilize the small quantity of sulphuric anhydride in the mixture. Although the cost of pumping the gas is small, nevertheless, considering its corrosive action on the machinery, and the great amount of time required to treat a batch of oil, it would seem that no especial advantage is to be gained by its use, although, no doubt, a great saving in acid is effected thereby.

Large quantities of acid are used in refining California oils, in order to remove the sulphur and other impurities therefrom. In California oil the sulphur is combined, probably in the form of sulphur ethers, which makes it very difficult to remove. The two best California oils on the market contain from .015 to .035% sulphur; the second grade oils from .03 to .06%, and the cheapest as much as .13% sulphur. The gravity, color, viscosity, and distilling limits are of little importance as shown by the following tests:

Sample No. 781. Coal Oil.

Sp. Gr.	41.5° Be′	Distillation Test.	
Flash	110° F. (Abel)	% up to 150° C.	1.0
Viscosity	114	" " 250° C.	80.0
% Sulphur	0.015	" " 300° C.	15.0
Color	Nearly water-white	" over " C.	4.0

This is a first grade oil and will burn in any lamp.

Sample No. 790. Coal Oil.

Sp. Gr.	44.0 Be′	Distillation Test.	
Flash	96° (Abel)	% up to 150° C.	5.5
Viscosity	104	" " 250° C.	88.0
% Sulphur	0.035	" over 250° C.	6.5
Color	Water white		

This is a first grade oil and will burn in any lamp.

Sample No. 803. Coal Oil.

Sp. Gr.	43.5° Be′	Distillation Test.	
Flash	105° F. (Abel)	% up to 150° C.	1.0
Viscosity	106	" " 250° C.	96.0
% Sulphur	0.11	" over 250° C.	3.0
Color	Standard white		

This is a second grade oil and will burn only in certain lamps.

Sample No. 754. Coal Oil.

Sp. Gr.	44.5° Be′	Distillation Test.	
Flash	105° F. (Abel)	% up to 150° C.	0.5
Viscosity	104	" " 250° C.	96.0
% Sulphur	0.015	" over 250° C.	3.5
Color	Water white		

This is a second grade oil and will not burn in mammoth lamps.

Owing to the nature of the impurities in California oil, no method of treatment with 66° Be′ sulphuric acid alone will ever be successful, because 66° Be′ sulphuric acid alone will not combine chemically with Xylenes and Naphthenes, the chief constituents of the impurities. But either fuming sulphuric acid or sulphuric anhydride combine readily with them, especially at higher temperatures, and are the only acids at present obtainable for the purification of kerosene distillate. Chlorosulphonic acid is even more effective, but not at present obtainable in quantity in this country.

Lubricating Oils.

Engine Oils: The treatment of the lubricating oil distillate is the same as the treatment of benzine, expect that the oil is maintained at a temperature of from 180° to 200° Fahr. during the entire process by means of a steam coil placed in the bottom of the agitator. The acid used is preferably not over 65° Be′ sulphuric acid, and the washing is performed most carefully, i. e.: the oil is agitated very gently, after separating the sludge as completely as possible. The lye used is weak—not over 3° Be′. If the agitation is vigorous, or the lye strong, an emulsion is formed from which it is very difficult to separate the oil. The clean oil is then put into a still and "reduced," i. e.: the lighter portion distilled off, using much steam, until a sample taken from the still shows the proper viscosity. The oil which distills over is used for spindle or neutral oil, and what remains in the still, if not up to color, is again treated with a small portion of acid, etc., dried by blowing air through it at a temperature of not over 140° Fahr., when it should show a fine red color by transmitted light, and a greenish-blue color by reflected light. The oil is sold as light or heavy engine oil, according to the gravity, has a fire test of about 480° Fahr., and if properly made is an excellent lubricant.

Cylinder Oil.

If it is desired to make cylinder oil, the distillation of the crude is stopped when the gravity of the still bottom is about 17.5° Be′. The still bottom, after cooling to near 180° Fahr., is run into an agitator and treated with acid until the desired color is obtained, neutralized with lye, washed somewhat, and reduced to the desired viscosity. The oil is a dark green viscous liquid of about 550° Fahr. fire test, and of fair quality.

In some works it is the practice to allow the sludge to settle very perfectly and to reduce the cylinder stock without neutralizing the acid. The acid is decomposed in the reducing process, and a perfectly neutral oil is obtained, which, however, is generally darker in color than oil neutralized before reducing.

Compound Oils and Greases.

California lubricating oils can be compounded in the usual manner, and a great variety of products obtained. Some of the compounded oils are superior to the straight oil, while others are inferior. Axle grease, gun grease, and like compounds of good quality can be made.

Other Products.

Various other products of California oil are made in limited quantity, for example: floor oil, paint oil, substitutes for turpentine, etc., each usually being specially prepared to meet the demands of the customer.

Recovery of Acid From the Sludge.

The sludge obtained from the acid treatment of the light oils contains about 50% of acid, 70% of which may be recovered by proper treatment.

The sludge made by the use of cold acid is agitated with sufficient water to make the acid which separates from the tar above 40° Be′ gravity. After standing in heated tanks one or more days, the separation of the acid is fairly complete, and it is drawn off from beneath the tar and run into leaden pans to be concentrated in the usual way. The acid finally obtained is about 65° Be′, dark brown or even black in color, but perfectly suited for use in oil refining.

Sludge made by the use of hot acid is not amenable to this simple treatment, but, as pointed out by Beilstein, is more easily and cheaply decomposed by superheated steam. To accomplish this, the sludge is put into lead-lined retorts of about 1000 cubic feet capacity and superheated steam passed through the mass for from ten to fourteen hours. The steam and oil vapor issuing from the retort are condensed in lead condensers, the oil separated and used for fuel. The acid and tar are allowed to stand in heated tanks until separated, when the acid is drawn off to be concentrated, and the tar used as fuel.

GOVERNMENT INVESTIGATION

Review of Statistical and Technical Facts Submitted to the President by the Commissioner of Corporations.

By Lewis H. Eddy.

Editor's Note—The following are the first two of a series of articles reviewing the reports issued by the Bureau of Corporations on the production, refining and transportation of petroleum in the United States. The writer of the series was a special agent of the Bureau and had part in the inquiry. When asked to prepare these articles for the California Derrick, Mr. Eddy agreed to do so upon the understanding that they should contain no comment on the merits of the Commissioner's report nor opinion of the Standard Oil Company's position in the industry as presented in the report, but should deal solely with the statistical and technical facts deemed of vital interest to producers and consumers of crude and refined petroleum. There have been three reports or parts made by the Commissioner of Corporations to the President of the United States, and three others to be published. These reports will be reviewed in the order of their sequence.

* * *

I.

CRUDE OIL PRODUCTION.

Description of Fields—Percentages—Outputs.

At the present time there are, strictly speaking, seven distinct crude oil fields: the Appalachian (or Pennsylvania), Lima-Indiana, Illinois, Mid-Continent, Gulf, Colorado, and California.

The Appalachian field, the largest and oldest in the United States, extends over an area of 50,000 square miles and into the States of New York, Pennsylvania, West Virginia, Ohio, Kentucky, and Tennessee. More than 160,000 wells have been drilled in this field since the first practical operations in 1859. In 1870 the production was 5,260,745 barrels. In the years following the production varied, reaching 36,295,433 in 1900, and declining to 29,366,960 in 1905. The oil is of paraffin base, and employed in refining, yielding about 67 per cent illuminating oil, the balance chiefly in naphtha and lubricating oils.

The Lima-Indiana field extends into northwestern Ohio and eastern Indiana. The production begun in Ohio in 1885, extending into Indiana in 1889. The output of the field reached 15,000,000 barrels in 1890, and in 1896 the maximum was reached in the production of 25,256,120 barrels. These figures have since been reduced to 22,745,255 in 1905. This latter figure includes 181,084 barrels produced in Illinois, which was included in the Lima-Indiana field. The oil in this field is produced from Trenton limestone formation, and yields 40 to 50 per cent illuminating oil and 10 to 15 per cent naphtha and lubricating, and a considerable percentum of gas oil and fuel oil.

The Illinois field, as it is now known, was clearly established in 1905, when the new field was opened in the eastern part of the State, and though the limits have not as yet been fully established, they extend over an area of 50 to 60 miles in length and 10 miles in width. In 1906 and 1907 the production was running at the rate of more than 18,000,000 barrels per annum. The geological formation differs somewhat from the Lima-Indiana, but the yield of refined products is in about the same proportion of percentage.

The Mid-Continent field is commonly known as the Kansas field, but extends into Oklahoma (and Indian Territory). This field became commercially productive in eastern Kansas in 1893, but did not extend into Oklahoma and Indian Territory until 1904, in which latter sections the increase has been more rapid than in Kansas. The output of the whole field for 1904 was 5,617,527 barrels, increasing to 12,013,495 in 1905. In March, 1907, the production was at the rate of about 30,000,000 barrels per annum. The yields of refined products is approximately the same as for the Lima-Indiana.

The Gulf field includes Texas and Louisiana; in some matters of statistical segregation the Commissioner's report refers to the Corsicana (Texas) section as a separate field. With the exception of the Corsicana section, the oil of the Gulf field is of poorer quality than the other fields already mentioned. The Corsicana is the only strictly refining oil in the field, and is equal, if not superior, to the oil of the Mid-Continent field, the geology being similar. The production of the Gulf field wells has been large, but decidedly temporary. The first commercial production begun in 1901 near Beaumont. The production of the Spindle Top pool was 17,420,949 barrels in 1902, then followed the Sour Lake, Saratoga, Batson and Humble pools. The production in Louisiana began in 1902, but the output has been much more constant than in the Texas pools, and in 1906 was about three-fifths as much as the entire production of Texas. The production for the whole field in 1905 had reached 37,046,605 barrels, but in 1906 diminished to less than 20,000,000. The production is now steady, but comparatively small.

The Colorado field is chiefly confined to the vicinity of Florence, where production begun in 1887 and reached the maximum of 824,000 barrels in 1902; in 1905 this declined to 365,736, and was augmented by 10,502 barrels from the new field at Boulder, which is superior to the Florence oil.

The California field covers most of the west half of the State south of Monterey, and includes 11 pools or local fields: Coalinga, Kern River, McKittrick, Midway and Sunset, Santa Maria, Summerland, Ventura, Newhall, Los Angeles, Puente and Whittier, Fullerton. The production begun in 1876 gradually increased until 1893, after which the annual increase was rapid. In 1900 the output was 4,324,484 barrels; in 1905 it had increased to 33,427,473, but decreased in 1906 to 33,098,598 barrels. Kern River field, though of comparatively small area, is the largest producer, reaching the maximum in 1904 with 19,608,045 barrels. The Coalinga and the Santa Maria fields have in the past two or three years shown the most marked development, producing at the rate of 8,000,000 barrels each per annum. California crude is of an asphalt base, and chiefly of heavy gravity, making it more valuable for fuel than for refining. The report says that in 1904, out of a production of 29,649,434 barrels of crude, only about 5,000,000 barrels went through the refineries. The percentum of California crude adapted to refining is placed by the report at about 26 per cent; but the Commissioner's yield statistics for California are based on results of oil actually refined, so that this should not be conceded as the precise measure of the refining possibilities of all the higher grades of California crudes; the percentage of crude run through the refineries has increased since 1904.

The production of crude oil in the fields named has increased almost continuously since 1860 from 500,000 bar-

rels in the Appalachian to 134,717,580 in all fields in 1905. The increase in the Mid-Continent, Illinois, Gulf and California fields contrasts strikingly, the report says, with the decline in the Appalachian and the slight increase in the Lima-Indiana from 1900 to 1905. The effect of these changes is more clearly shown in the following table of percentage of crude production:

Name of Field.	1900.	1905.
Appalachian	57.1%	21.8%
Lima-Indiana and Illinois	34.2%	16.7%
Mid-Continent	.1%	8.9%
Gulf	1.3%	27.5%
California	6.8%	24.8%
Colorado	.5%	.3%

The following table of production of crude oil by States, classified according to the fields in which they fall, for the years 1904 and 1905 is reproduced from the Commissioner's report for the purpose of here presenting what may be considered a fair showing of the volume and growth of the crude oil industry in the United States. The table gives a total of 117,080,960 barrels for 1904 and 134,717,580 barrels for 1905. In connection with these figures it is pertinent to add that the production of crude oil in 1906 in the United States totaled only 126,493,936 barrels. (See Pacific Mining and Oil Reporter, Nov. 5, 1907, page 7.) It is not the province of the writer to here discuss the causes for the decline in development and production in 1906, though it is not impertinent to say that it was not through lack of demand on the part of the consumers of crude oil.

Production of Crude Oil in the United States in 1904-1905.
(In Barrels of 42 Gallons.)

Field and State.	1904	1905
Appalachian Field:		
New York	1,113,264	1,117,582
Pennsylvania	11,125,762	10,437,195
West Virginia	12,644,686	11,578,110
Southeastern Ohio	5,526,571	5,016,736
Kentucky and Tennessee	998,284	1,217,337
Total	31,408,567	29,366,960
Lima-Indiana and Illinois Field:		
Northwestern Ohio	13,350,060	11,329,924
Indiana	11,339,124	10,964,247
Illinois		181,084
Total	24,689,184	22,475,255
Mid-Continent Field:		
Indian Territory and Oklahoma	1,366,748	12,013,495
Kansas	4,250,779	
Total	5,617,527	12,013,495
Gulf Field:		
Louisiana	2,958,958	8,910,416
Texas	22,241,413	28,136,189
Total	25,200,371	37,046,605
California	29,649,434	33,427,473
Colorado	501,763	378,238
Wyoming	11,542	8,454
Michigan and Missouri	2,572	3,100
Total for United States	117,080,960	134,717,580

* * *

II.

VARIOUS CRUDE OILS.

Relative Values—Gravities—Yields.

The relative quality of the crude oils of several fields is indicated by a comparison of their specific gravities, of which the report says it is impossible to present a true average owing to the considerable range in each field. In the following table reproduced from the report the approximate prevailing range, both of the true gravity and by the Baume test, for the several kinds of crude is given:

Approximate Gravities of Crude Oils.

Field.	Baume Scale.	True Specific Gravity.
Appalachian (excluding Franklin and Kentucky)	40-48	0.825-0.788
Lima-Indiana	35-40	.849- .825
Illinois	28-40	.865- .825
Mid-Continent	28-40	.887- .825
Colorado (Florence)	30-32	.875- .865
Gulf	14-25	.972- .905
Corsicana (Excluding Powell)	40	.825
California	12-30	.986- .875

The crude of Kentucky is inferior of quality and small in production, and the Franklin (Pa.) crude is a heavy oil used for the manufacture of lubricants.

The approximate average yield of leading products from different crude oils is shown by the following table reproduced from the report:

Approximate Yields of Products from Various Crudes.

Products.	Appalachian. Per Cent.	Lima-Ind. Per Cent.	Mid-Cont. Per Cent.	Gulf. Per Cent.	California. Per Cent.	Corsicana. Per Cent.	Colorado. Per Cent.
Naphtha, gasoline, benzine, etc.	12.0	11.5	11.0	3.0	6.0	7.0	3.5
Illuminating Oil	67.0	43.0	41.0	15.0	18.0	50.0	35.0
Lubricating Oils (including grease)	12.5	15.0	...	6.0	1.5	...	3.0
Fuel oil (including gas oil, acid oil, asphaltum oil and asphaltum	4.0	25.0	...	...	72.0	...	...
Gas oil (only)	...	...	25.0	45.0	...	...	...
Asphalt (only)	...	...	20.0	28.0	...	40.0	55.0
Paraffin Wax	2.0	2.0	...	...	...	...	...
Totals	97.5	96.5	97.0	97.0	97.5	97.0	96.5

The report says that gas oil is a product of distillation, while fuel oil is ordinarily a residium after the lighter products have been distilled off, and that it has been found impracticable to distinguish the yields of gas oil from those of fuel oil for the Lima-Indiana and California crudes.

A much greater number of products may be derived from the crude oils of the United States, but in practice, the report says, most refiners produce only a comparatively small number. Paraffin wax has a higher value per unit than any other group of products named in the table. While the yield, as shown by the table, is only 2 per cent, the value of the paraffin product of the Appalachian and Lima-Indiana fields is 7 per cent of the output of the refineries.

The report states that the crude of the California, Gulf, and Mid-Continent fields have not been handled by the refiners with a view to obtaining certain important products which they are capable of producing; lubricating oil could be produced in fair quality and considerable quantity from these crudes.

Regarding the various factors affecting the relative refining values of the respective crudes the report says: "They may be roughly considered as approximately proportional to the yield of illuminating oil and naphtha. . . . The Appalachian crude is superior to any other American crude in respect to both of these products. The lubricating oil is also superior in quality. The freedom from sulphur and other impurities makes the refining simpler and less expensive. Lima-Indiana and Mid-Continent crudes are approximately similar in refining values, standing intermediate between the Appalachian crude and the Gulf and California crudes."

California Derrick

The Oil Authority of the Pacific Coast

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ANNOUNCEMENT

We submit herewith the first number of the CALIFORNIA DERRICK, a journal that will at all times be published to the exclusive interests of the petroleum industry of the Pacific Coast. The petroleum industry has now reached a stage of development that requires, and will support, an independent oil journal, and as such the CALIFORNIA DERRICK will be conducted.

The CALIFORNIA DERRICK announces its policy as one radically in disfavor of the many stock manipulating schemes of the day and will devote its space, and its editors will exercise their energy, in exposing them and prosecuting the manipulators. Texas has suffered immeasurably by the operations of these sharks, the early days of the California oil industry was stained by their nefarious work. Today there is a horde of promoters in our midst who should be prosecuted and punished. It will make no difference if they have fortified themselves behind fortunes of ill-gotten gain, they will be ferreted out and exposed. The CALIFORNIA DERRICK is opposed to the discriminations in favor of the larger marketing companies, and such discriminations will be exposed in every instance where the facts can be substantiated.

The CALIFORNIA DERRICK has no connection whatsoever, either directly or indirectly, with the publication formerly known as the Pacific Oil Reporter or the Pacific Mining and Oil Reporter, which publications have been discontinued. The complete ownership and management of the CALIFORNIA DERRICK is vested in its managing editor, who has severed all connections from the journals named above and from their owners.

REVIEW OF COMMISSIONER'S REPORT.

A review of the technical and statistical features of the report of the Commissioner of Corporations on the "Petroleum Industry and the Transportation of Petroleum" is begun in the present issue of the Derrick. The investigation was begun by the Bureau of Corporations in the early part of 1905 and completed at the end of 1906, and has thus far resulted in the publication by the Bureau of three volumes: (a) Position of the Standard Oil Co.; (b) Prices and Profits; (c) Transportation. There are at least three other volumes to follow; being special reports: (1) the California field; (2) the Kansas field; (3) the foreign trade. The review here promised must for the present, of course, be confined to the reports so far published. These three volumes comprise an aggregate of nearly one million words; so it may be seen that even a discussion of merely the technical and statistical features must be confined to such facts as are timely and of direct interest to the readers of the Derrick. This review will take up the following subjects in the order here named: I—Crude Oil Production; II—Crude Oil Values; III—Standard and Independent Refineries; IV—Lubricating Oil for Railroad Equipment; V—Transportation; VI—Distribution; VII—Prices and Discriminations; VIII—Margins and Profits. These articles will be confined to the facts as presented in the Commissioner's reports relating to the technical and statistical features, and will in no wise discuss the merits of the reports or the position of the Standard and the Independents. Mr. Eddy, the writer of these articles of review, holds (and, we think, very properly) that a special agent of the Government has no moral right, even though the legal right may not be denied him, to express opinions publicly upon matters with which he has been concerned as an agent in getting information, even after his relations with the Government have been concluded and the results of the investigation been published.

STOCK JOBBERS TO BE INVESTIGATED

President Roosevelt has directed Herbert Knox Smith of the Bureau of Corporations to investigate into the methods of stock selling with the view of furnishing the basis of future legislation and also probable prosecutions. The oil industry has furnished a particularly attractive field for the manipulations of the criminal promotor, and it is more than probable that some of the Wall-street stock jobbers will have the honor of the first attention from the department.

The President fully appreciates the difficulty in attempting Federal regulations for the sale and transfer of stock until such a time as the Commissioner shall have ascertained the main facts relative to the practices of the unscrupulous. It is the intention to frame up such legislation as will fully eliminate the wild-cat promoter without working hardships upon legitimate enterprises; thus giving full protection to the investor, who, in few instances, is enabled to protect himself.

SUNSET-COALINGA HIGHWAY SHOULD BE COMPLETED.

A concerted effort is being made to induce the Supervisors of Fresno county to extend the main highway from the Kettleman plains to Coalinga, thus giving a continuous road between Coalinga and Sunset, there already being a fairly good road between Sunset and the Kettleman plains. If the petition is granted, and a good road built, it will be of great benefit to the oil industry. Many

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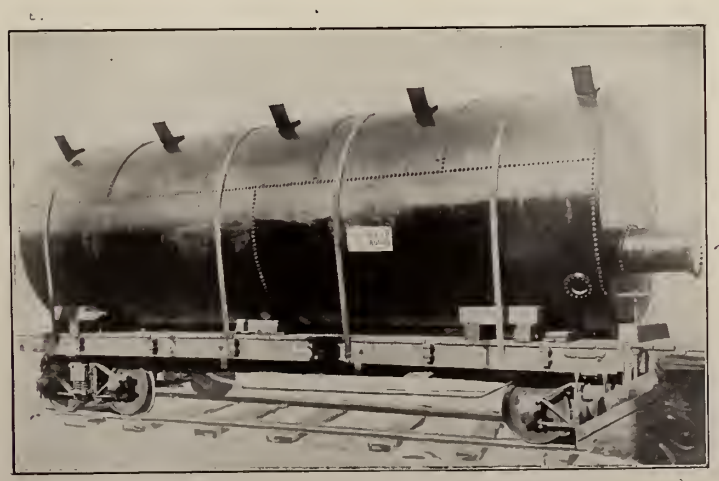

OIL STILL

of the prominent oil men own automobiles and could cover the territory embracing their interests between Coalinga and Sunset, which is practically a continuous oil formation, without having to take the circuitous route of the railways. The entire distance of 100 miles or more could be covered in a few hours, the railroad route, by means of poor connections, requiring two days, or, at least, a part of two days. The intervening territory between the two above-named points will be the scene of tremendous activity in oil development in the next few years. The petition should, at all events, be granted.

THAT SMITH BILL.

Congressman Smith of California has introduced into the House of Representatives a bill ostensibly intended for the betterment of the oil man citizen in the securing of lands chiefly valuable for oil and asphaltum, but which, in reality, could only work a hardship to the development of the State's great industry.

In the first place, any individual or corporation is limited to a single 160 acres of land, nor could any individual or corporation acquire more than a 160-acre tract until after final title had been secured, the bill providing that "No individual or corporation shall be a party to final proof proceedings under this Act on more than one claim." This would limit an individual or corporation to a single 160 acres, nor could a second 160 acres be taken up by the same party even after the title to the first 160 acres had been perfected. It would put the developer of oil upon the basis as it the homesteader and put the oil business into the hands of thousands of small operators, each limited to a 160-acre tract. It would be oil farming on a small scale. It would, at the same time, work into the hands of the larger corporations as the property could be deeded to them as soon as final proof had been made. It would be a case of each locator sticking by his guns and operating his 160 acres or forever quit the business.

The inconsistency of the bill is shown in paragraphs 2 and 3, the second providing that the locator shall make affidavit that the land is chiefly valuable for its deposits of mineral oil or asphaltum, and the third requiring an affidavit that the said land is non-mineral in character. As petroleum and asphaltum are mineral substances, a claimant would be required to commit perjury to prove up on his claim.

As a matter of fact our present location laws are good enough; all that is required to perfect them is an amendment providing for the protection of a locator who is prosecuting work in good faith; allowing the said locator 160 acres for each well actually drilling. Failure to continue work in good faith for a period of 60 or 90 days should work to forfeit the claim. We think that an operator developing territory ten miles or more away from a producing well should be allowed more than 160 acres as a reward for his efforts; 640 acres, located in tracts of not less than 40 acres each at the will of the locator, would be a more adequate compensation. However, a badly doctored location law would be most undesirable at this time. The one amendment, the protection of the legitimate developer, is all that is required.

THE INDEPENDENT CONTRACT.

The signing of the contract between the Independent Oil Producers and the Associated Oil Company by the parties of both parts sets the pace for a higher price for California oil, a price better than 60c a barrel, and a notable contrast to the posted price of 11 2-3c of some two and a half years ago. By the terms of this contract a production of something like 18,000 barrels daily is tied up at a price better than 60c per barrel for a period of two years and takes care of practically all of the independent production—production not already contracted or owned by the marketing companies—and aggressive development for new production has already commenced. Over 100 strings of tools are running on new and old work in the Coalinga field alone, with 30 rigs up and several building. Other fields show a corresponding activity and every effort will now be made to maintain and, if possible, to increase the production.

The oil development of California is practically interesting at this time, particularly so as the production is largely used as fuel which is a radical contrast from the history of the oil fields of other States. Yet more than 1,000,000 barrels of refined oils were shipped from the Pacific ports of the United States during the year 1907, an amount about equal to the entire crude production of California for the year 1906.

There is now no question as to the demand for petroleum oil having exceeded the supply. In fact, there is every reason to believe that there is a material shortage; not so much in actual present demand as in known requirements. The uses of oil could be immediately increased to a very material degree if the supply could be assured. The hundreds of wells now going down will alone determine the possible extension of the uses of oil as a fuel. At any rate the Independent Oil Producers have satisfied the question of surplus production and future contracts will be at a figure materially in advance of 60c a barrel.

ASSOCIATED PIPE-LINE COMPANY'S RIFLED LINE NEARING COMPLETION.

The actual laying of the rifled pipe of the Associated Pipe-Line Company's pipe-line from Volcan to Port Costa, work being held up at Bay Point, nine miles from the northern terminal until the intervening marsh has been spanned with piling. The total amount of pipe laid to date is 273 inches, the entire length of the line, exclusive of latterals, to be 282 inches. The line will be completed to Port Costa by the first of April with the exception of the pumping stations, which are well under way, but which are going ahead more slowly than the laying of the pipe. It is not expected that the line will be in operation before the middle of July.

There will be 23 pumping stations along the line, the equipment at each station being in duplicate, so that in the event of a breakage in the machinery of one pump the relay can be immediately put into service.

A new and interesting feature of the line is the character of the pipe used, its "rifled" construction being a somewhat radical departure from that of lines now in use for conveying oil. Spiral indentations accomplished in the rolling of the pipe constitute the rifling.

An exhaustive series of experiments has demonstrated that after a small per cent of water has been added to the oil, and the necessary pressure applied, that the whole will develop a whirling motion, and that the water being the heavier will seek the outside of the pipe, thereby enveloping the oil in a thin film or shell of water; this shell or film of water acting as a lubricant between the oil and the pipe, and thereby greatly reducing the friction and allowing the core of oil to glide through the pipe readily.

The inventor of this system of pumping sold his patent for $40,000 and a lucrative position with the company that will put it into operation. At the time the experiments were made 12,000 barrels daily were pumped thirty-two miles without intermediate stations, and it was convincingly shown that a much greater amount could be carried in a specified period of time by placing the stations somewhat closer and having the pipe rifled while hot at the factory instead of the cold process used in the experimental line and which caused several breaks in the line, which allows the current of oil to stop and settle to the bottom, where it gummed the pipe and caused no end of trouble. This is the only difficulty to overcome in the operation of the corrugated system, but it is not likely to occur except in case of a break in the pumps or in the line. In case it is necessary to shut down, the stream of oil is shut off and the water continued until the oil has been run out of the other end, and then the line is full of water and ready to commence pumping again. The quality of oil in the line may be varied at will by simply pumping in more or less water. With the size of the pipe, which is eight inches and a high pressure carried and improved facilities in every way, a rapid transmission of the oil has been shown to be possible, and it is estimated that from 18,000 to 20,000 barrels of fuel oil can be delivered every twenty-four hours. By doubling the number of stations (sites for the same have been secured) it is believed that the capacity of the line may be materially increased.

In the laying of the pipe every precaution has been made to provide for its protection from the ravages of the elements. The pipe is first painted with a chemical-proof paint, then wound with burlap, the burlap in turn being saturated and coated with the paint. Many miles of other lines in the San Joaquin Valley have been literally eaten to pieces by the chemicals in the soil. This was particularly true of one line through which superheated oil was pumped. The rifled line being so thoroughly protected will, it is thought, last for many years.

At Port Costa the pine-line company has an excellent terminus, being provided with connections with the Southern Pacific Railway, also with an excellent wharf with 40 feet of water which will amply accommodate the loading of the largest tank steamers.

The directors of the Associated Pipe-Line Company are E. E. Calvin and W. F. Herrin, of the Southern Pacific Railway Company, and W. S. Porter and Frank H. Buck of the Associated Oil Company, G. L. King making the fifth. Practically all of the capital stock is held by W. S. Porter and W. F. Herrin, the other three directors being accredited with but ten shares each. The total capital stock of the company is $7,000,000.

NEW METHOD OF PUMPING.

Mr. Charles Dickinson of Maricopa, California, superintendent of the Adeline Oil Company, has recently perfected an invention for pumping and handling oil wells that produce a large quantity of sand with the oil. The heavy oils of many portions of the State, and especially Sunset, usually produce so much sand that in many cases there is more time spent cleaning out the well than in pumping, and the great quantity of sand wears out the ordinary pump barrel in a very few days and sometimes in a few hours. With Mr. Dickinson's invention, the wells require no cleaning at all, or at least very seldom, and there is scarcely any wear on the pump barrel.

His system is to attach the pump barrel, which must be of large size, directly to the inside string of casing, which is kept loose, and the plunger is attached to an ordinary

Exports of Domestic Mineral Oil From the Pacific Ports of the United States, and Shipments to Alaska and Hawaii, during January, 1908

CUSTOMS DISTRICTS	MINERAL OIL CRUDE		MINERAL, REFINED OR MANUFACTURED							
			NAPHTHAS, ETC.		ILLUMINATING		LUBRICATING		RESIDUUM	
Domestic Exports—	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Alaska			120	40	450	102				
Puget Sound	420	25	200	57	790	124	5,703	1,129	3,335	206
San Diego					1,110	205			2,898	255
San Francisco			3,160	794	6,071,218	312,170	15,949	4,725		
TOTAL DOMESTIC	420	25	3,480	891	6,073,568	312,601	21,652	5,854	6,233	461
Shipments to Alaska—										
From Puget Sound			26,726	4,682	26,880	5,943	5,403	1,979		
" San Francisco					350	55				
Shipments to Hawaii—										
From San Francisco	3,654,150	52,275	17,410	2,396	224,080	32,509	9,617	5,851		

sinker and worked with a wire line, or it can be used on heavy pump rods.

Mr. Dickinson has his invention applied to a well that could not be pumped at all with the usual pumping outfit. There were several times as much sand as oil, but with his pump the well is now producing about 100 barrels of oil per day. This test has thoroughly convinced all who have seen it that the invention is a very valuable one.

With the large barrel and the small opening at the bottom, the oil enters and flows up so easily that there can be very little, if any, wear, and with the large plunger and sinker working in it, keeps up a steady flow of oil and sand to the surface. In case the well should sand up, as it is bound to do occasionally, the wire line is disconnected from the beam and the plunger raised up a few feet out of the barrel, when the oil immediately flows back into the well, carrying all of the sand with it, and in a few minutes the plunger is lowered and re-connected to the beam and the pumping proceeds with very little lost time.

Mr. Dickinson has secured a patent for his method of handling wells and the necessary appliances, and will soon put the device on the market. It has already attracted the attention of several oil men who have a sandy proposition, and they begin to feel that a very difficult problem has been solved.

OIL FIELD NOTES.

Beaver Valley Oil Company, operating in Beaver Valley, Caraboo, B. C., is going ahead with well No. 2 with the strong support of the Eastern stockholders of the corporation. Development for oil in Canada is particularly attractive on account of a bounty of .52½c offered by the Canadian Government. The Beaver company is confident of success with its No. 2 well.

It is understood that the Union Oil Company of California has sent one of its experts to Graham Island, B. C., part of the Queen Charlotte Islands, to investigate and report on favorable oil indications there.

San Francisco parties have shown us attractive samples of oil sand and oil from oil seepages on an island in Mono Lake, California. The presence of oil on this island has been known for years and several geologists have investigated the same with varying reports. An effort will now be made to secure reliable data on the formation of the island and derricks in mid-Mono may be a spectacle of the near future.

Associated Oil Company, Associated Pipe-Line Company and subsidiaries will move from their present headquarters in the Kohl building to the Wells Fargo building about April 1st. The new home of the great marketing company will be more spacious and more in touch with its requirements than the eleventh floor of the building it now occupies.

COALINGA.

The oil situation in this field today is in a very satisfactory condition. The operator has again turned his attention to production, those in the Independent Oil Producers Agency who, in compliance with the policy of their leaders had closed down their leases, as far as practical, who had stored the production of their wells as best they could have taken up the subject of bringing old wells up to their production. It is a recognized fact the world over that new wells must be drilled to keep up production, so to that end they are making ready for further development. Those companies who are not with the Independent Producers (they are few, perhaps five) who have contracts with the Associated Oil Company and the Standard, and those selling on daily runs, are plodding along until such time as the demand will bring the price up to 60½ cents. A few companies have contracts with the Standard and the Associated at 50 cents, one company with nine producing wells has yet to deliver its oil to the Associated Oil Company at less than 25 cents, as nearly two years of its contract is unfilled. The hope prevails among these companies, until it is now rumored that the Standard will advance the price on daily runs to 60½ cents, if the rumor had—or would have—stated that there was hopes of securing a two-year contract with the Standard at the same rates received by the Independent Oil Producers it would be more reasonable.

There are a number of new companies who will bring in a large production that will go to the Independent Oil Producers Agency, among them are the Merango, Euclid, Norse, Traders, Claremont and Premier on section 24-20-14 Angelus and Ozark on section 23-20-14, Kurtz & Co., the New Era and the Ward, on section 12-20-14, West Coalinga, on section 12-21-14, Lucile, well No. 2, and the Wm. Graham well, on section 6-21-15, these on the west side.

On the North End the Imperial has three strings of tools running on section 2-19-15 under the charge of a very competent superintendent. The T. C. Oil Co. (Wm. Graham), on section 2-19-15, has one well producing with well No. 2 nearly completed. On the East Side the old companies are developing; the California Oilfields, Ltd., is running seventeen strings of tools on new wells; the Standard is running six strings of tools on section 28-19-15. The Kern Trading & Oil Co. (S. P. Co.) is building a large camp on section 35-19-15. Report has it that the company will drill ten wells on the west line, most of the material is now upon the ground. This will be 3000-foot territory. It is believed from surveys made that they will soon establish a camp on section 23-19-15.

In the Southern Coalinga field there are seven strings of tools which by April 1st will all be running, among these seven companies the El Cerrito, on section 14-23-17, is 2200 feet with heavy 10-inch casing; the Kreyenhagen Oil Co., on section 12-22-15 is 600 feet deep with first string of casing. This company has made strong financial connections with Eastern capitalists and wil bresume operations soon and press development work. There are a number of new companies now forming that will operate in the North End, the West Side and Southern Coalinga fields during the next two months.

The task of connecting up the many new companies with the Associated Oil Company's pipe-line is well under way. It was thought best by the Agency to relieve those companies first that were cramped for storage room those companies are now about all on the line. A number of Dow line pumps have been ordered, and it will be the policy of the Ageney to have each company use a pump with equal pressure, that all may be served alike, as a more powerful pump would crowd out of the line the lighter pumps' oil. These pumps are due to arrive about March 20th.

The Coalinga Independent Oil Producers Agency will handle about $80,000 per month from sale of oil with present production. There are a number of the new companies that are in the Agency and others forming that will apply for admission whose wells will swell the production and will add to the volume of business to pass through the Agency. Our local bank will handle all the checks that will exchange the amounts going to each company.

On February 1st there were about ninety-six strings of tools running on drilling wells and six strings of tools running on wells that were being deepened, making a total of 105 strings of tools. It is estimated that by April 1st there will be running at least 150 strings of tools in the Coalinga fields.

There is increasing interest being shown in the territory south of Coalinga, in what is known as Southern Coalinga, by all oil men who expect to operate land now held under Mineral location. An attempt has been made to jump some mineral land by "homestead" entries, which are now being investigated by the general land office.

The Southern Pacific Company will give Coalinga two passenger trains per day, commencing this month. A persistent effort has been made by John A. Bunting of Coalinga and M. Tarpy of Fresno to secure this service. A train will leave Coalinga about 6:30 a. m., arriving in Fresno at about 10:45 a. m.; the regular train will leave at 3:30 p. m., arriving in Fresno at 7:50 p. m., both trains making connection at Goshen Junction for all points north and south. From Fresno this new service gives us the regular 8:40 a. m., arriving at Coalinga at about 12.25, noon. The extra train will leave Fresno at about 4:30 p. m., arriving in Coalinga at 9 p. m.

The town of Coalinga is growing fast. We need a commercial hotel for our town folks and for the traveling public.

The Associated Oil Company, on section 36-20-14, has brought in a gusher in well No. 23. The well is estimated to be doing nearly 1000 barrels daily.

The Call Oil Company, on section 32-19-15, has resumed work; well No. 1 will be put to pumping. Work will be started on well No. 2 as soon as the rig is built; material is now being hauled.

The West Coalinga, on section 12-21-14, has shut off the water with the 6-inch and are now putting in the 4½-inch. One hundred feet will take them to the pay sand.

The B. & B. Oil Company, on section 12-20-14, is spudding in on No. 3. Well No. 2 has been completed and shows up fine.

Kurtz & Company, on section 12-20-14, are spudding in on well No. 1 on the Brix lease, and are down 200 feet with open hole.

J. W. Pauson, I. L. Bryner and Robert Hays Smith are in the field looking over their oil interests.

The Imperial Oil Company, on section 2-19-15, has material on the ground for six rigs. They are drilling on wells No. 1 and No. 2.

The New Era Oil Company, on section 12-20-14, is down 500 feet with 12½ casing.

The Coalinga Petroleum Oil Company, on section 14-20-14, is building derriek and rig for well No. 5.

A very pretty cottage is being built on section 7-20-15. The location, the owner, the season, all lend credit to the rumor that within the four walls will vibrate the musical strains of a fair voice that has enthralled Robert Hays Smith.

Following is the status of operations in the Coalinga field as at February 1st:

Company.	Section.	Township.	Range.	Wells Drilling.	Old Wells Deepening.	Idle.	Wells Producing.	New Rigs.
North End—								
Los Angeles Coalinga	28	18	15	..	..	..	..	1
Tavera Oil Company	34	18	15	1	..	..	..	..
Imperial Oil Co.	2	19	15	..	..	..	..	3
W. M. Graham	2	19	15	2	..	..	1	1
Totals				3	..	..	1	5
East Side—								
Cal. Oilfields, Ltd.	10	19	15	..	..	..	..	2
Lorene Oil Co.	12	19	15	1	..	..	..	..
California Diamond	12	19	15	1	..	..	..	..
Cal. Oilfields, Ltd.	14	19	15	1	..	..	4	..
Cal. Oilfields, Ltd.	21	19	15	..	..	..	9	..
Cal. Oilfields, Ltd.	26	19	15	2	..	..	1	..
Cal. Oilfields, Ltd.	27	19	15	10	3	..	31	1
Cal. Oilfields, Ltd.	34	19	15	4	..	..	9	..
Coalinga Oil Company	20	19	15	..	..	..	7	..
Home Oil Company	20	19	15	..	..	2	7	..
Octave Oil Company	22	19	15	1	..	..	2	..
Coalinga Peerless	22	19	15	..	1	1	9	..
Twenty-two Oil Co.	22	19	15	..	..	..	1	..
Record Oil Co.	22	19	15	1	..	1	..	..
National Thirty	22	19	15	..	..	..	5	..
Sauer Dough Oil Co.	22	19	15	..	..	..	7	..
Caribou Oil Co.	22	19	15	..	1	..	12	..
Pittsburg Oil Co.	24	19	15	1	..	..	..	..
Montana Oil Co.	24	19	15	1	..	..	..	..
Boston and California	24	19	15	1	..	..	..	..
Scott Miller et al.	24	19	15	..	..	..	..	1
California Monarch	26	19	15	1	..	..	1	..
S. D. Porter	26	19	15	..	..	..	..	1
Standard Oil Co.	28	19	15	6	1	..	38	1
Hanford Oil Co.	28	19	15	2	..	..	8	..
Stockholders Oil Co.	28	19	15	..	..	..	5	..
W. K. Oil Company	2	20	15	2	..	..	1	..
Turner Oil Co.	2	20	15	2	..	..	..	..
Coalinga Mohawk	2	20	15	1	..	..	..	..
Totals				38	6	4	157	6
West Side—								
Penn Coalinga Oil Co.	1	20	14	..	..	..	1	..
Cypress Oil Co.	1	20	14	..	..	..	4	..
Fresno San Francisco	1	20	14	..	..	..	4	..
Zier Oil Company	1	20	14	..	..	..	7	..
Ward Oil Company	12	20	14	1	..	..	2	1
P. M. D. & O. Co.	12	20	14	..	..	..	4	..
B. & B. Oil Co.	12	20	14	1	..	..	1	..
Shawnut Oil Company	12	20	14	2	..	..	5	2
New Era Oil Co.	12	20	14	..	..	..	..	1
Union Oil Company	13	20	14	..	..	1	8	..
Coalinga Petroleum Co.	14	20	14	..	..	..	4	..
Home Oil Company	14	20	14	..	..	..	3	..
St. Paul Fresno	23	20	14	2	..	2	2	..
Coalinga Western	23	20	14	1	..	..	7	..
Euclid Oil Company	24	20	14	1	..	..	1	1
Norse Oil Company	24	20	14	..	..	..	..	1
Traders Oil Co.	24	20	14	2	..	..	3	1
Merango Oil Co.	24	20	14	1	..	..	..	..
Inca Oil Company	24	20	14	1	..	..	11	2
Wabash Oil Company	24	20	14	1	..	..	11	..
Kern Trading (S. P.)	25	20	14	4	..	..	2	1
Claremont Oil Co.	24	20	14	2	..	..	..	1
Premier Oil Co.	24	20	14	1	..	..	..	1
Angelus Oil Co.	26	20	14	..	..	..	2	1
Ozark Oil Co.	26	20	14	1	..	..	1	..
Caledonian Oil Co.	26	20	14	..	..	1	3	..
Blue Diamond	26	20	14	..	..	1	..	..
Associated Oil Co.	36	20	14	6	..	..	2	..
Cal. Oilfields, Ltd.	29	19	15	..	..	..	2	..
Aetna Pet. Co.	30	19	15	1	..	..	..	..
Commercial Pet. Co.	31	19	15	2	..	..	7	1
California Monarch	31	19	15	..	..	2	4	..

California Diamond .....31—19—15	1	..	..	1	..
Guthrey Oil Co. .....31—19—15	..	..	1	3	..
Confidence Oil Co.....31—19—15	..	1	3	8	..
Kern Trading O. Co.....31—19—15	..	..	..	5	..
Call Oil Company.....32—19—15	..	1	..	..	..
Claremont Oil Co. ..... 4—20—15	1	..	..	..	..
New S. F. Crude..... 6—20—15	..	..	..	5	..
S. W. & B. Oil Co..... 6—20—15	1	..	..	3	..
York Coalinga ..... 6—20—15	..	..	..	2	..
Mercantile Crude..... 6—20—15	..	1	1	3	..
Esperanza Oil Co..... 6—20—15	1	..	..	7	1
Section 7 Oil Co..... 7—20—15	..	..	..	7	..
Coalinga Pacific ..... 7—20—15	..	..	..	4	1
Porter & Scribner ..... 7—20—15	1	..	1	1	..
M. K. & T. Oil Co..... 8—20—15	1	..	..	1	..
Peerless Con. .....10—20—15	1	..	..	..	1
West Coalinga .....12—21—14	1	..	..	..	..
Comm'l Petroleum .....12—21—14	1	..	..	..	..
Shreeves Oil Co. ..... 6—21—15	1	..	..	..	..
St. Francis Oil Co..... 6—21—15	1	..	..	..	..
Section Six Oil Co..... 6—21—15	1	..	..	..	..
W. M. Graham ..... 6—21—15	1	..	..	..	..
Lucile Oil Company..... 6—21—15	1	..	..	1	..
Coalinga Southern ..... 6—21—15	1	..	..	..	..
Michigan O. & D. Co..... 8—19—13	1	..	..	..	..
Totals	46	3	13	152	17
Southern Coalinga—					
Mt. Hamilton O. & D. Co..14—21—14	1	..	..	..	..
Blair Oil Co. .....14—21—15	1	..	..	..	..
Manchester Oil Co. .....18—21—15	1	..	..	..	..
Jacalitos Oil Co. .....30—21—15	1	..	..	..	..
Esperanza Oil Co. .....30—21—15	1	..	..	..	..
Kreyenhagen Oil Co.....12—22—15	1	..	..	..	..
El Cerrito Oil Co.....14—23—17	1	..	..	..	..
Totals	7	..	..	..	..
Summary—					
North End	3	..	..	1	5
East Side	38	6	4	157	6
West Side	48	3	13	152	17
South End	7	..	..	..	..
Grand Total	96	9	17	310	28

Sunset Midway.

On Saturday, March 7th, we counted twenty-two oil cars leaving Bakersfield for Sunset. There were twenty-three loaded oil cars returning from Sunset to Bakersfield on Monday. The Associated pipe-line from Coalinga to Monterey is taxed to its full capacity. The Union Oil Company is anxious to get into the Coalinga field; looking for an opening. The Standard Oil Company's chemist has discovered a process of gathering more by-products from the heavier gravity of our crude oil. That has stimulated their activity in Midway and they are now reaching into Sunset. Our Navy Department is looking towards liquid fuel for our smaller war craft. English capitalists are seeking investments in California crude oil for refineries. With these gathering facts from the history of the past year may be considered seriously with the future of the oil industry.

Pending the negotiations in the settlement of prices between the great marketing concerns and the Independent Producers, an effort was made to convince the timid that we were nearing an over-production; that consumption has fallen off; that development work had again overreached the mark. These for a purpose. As soon as the contract of 1908 had been signed up the real conditions have been brought out by this great activity on the part of the marketing concerns. We are approaching a condition in the industry that promises a new era in the history of the mineral production of California. The Eastern oil operators, the producers and the refiners are here on this coast in numbers as never before, investigating the conditions. Take the situation, as it really existed two years ago, a forced unrest caused by the attitude of the marketing concerns; the timidity of the producer all tended towards that condition that would force the producer to enter into contracts advantageous to the purchasing concerns. Today the activity, as herein stated, has stimulated the producer. He better understands the situation governing the industry. His experience of this season has made him a factor in the industry that will enter into the contract of 1910 with an influence that brings to the oil producers' side of the controversy weight that shall strengthen the industry on this coast. What credit is due L. P. St. Clair, Stanley Morsehead and their associates in the settlement of the 1908 contract can now be plainly seen after the smoke of the contest has passed.

There is considerable improvement going on in this camp, both in Maricopa and about the Sunset field. The National Supply Company has built a warehouse to the south of the main building to meet the increasing demand for supplies. L. C. Ross of Bakersfield is building a hotel that will be run by Ross and Thornton, with bar attached. A new store building is being built by Ross. Both buildings are substantial. Green's livery stable is an added necessity. Webster Iron Works, owned by the Sunset Monarch Oil Company, is doing considerable business. A number of dwellings are being put up.

The Sunset Monarch Refinery has a very compact plant, very economically handled, as everything is worked on gravity. The present capacity is about 800 barrels of crude oil daily. They have two 80-horsepower boilers, to which will be added immediately another 80-horsepower to meet the increasing demand for steam. They have a "mixer" that has proven a success. With this is blended the distillate with the crude, which brings up a 13 gravity crude to a perfect fuel oil. They are making some of the best asphalt from the crude that is known on the market, their grades, road asphalt, "D," "B" and "L." also a "flux," are made on standing orders. The demand for distillate is more than they can fill, as the consumption has increased the past few months wonderfully. I. L. Segur, general manager, reports the business outlook for Sunset oil as very much improved. The tests lately made with the low gravity oil have been very satisfactory.

There is considerable activity about the field around Maricopa. The Monte Cristo is running two strings of tools. Well No. 1 has some very promising formation. This is on the Pittsburg lease. The Yellowstone, on section 7-11-23, is 900 feet deep. The New Center, on section 12-11-24, is running two strings of tools. The Gate City, on section 1-11-23, is drilling on well No. 2. The Sunset Monarch, on section 2-11-23, is running four strings of tools. The California Diamond, on section 2-11-24, is building rig for well No. 3. The Rex, on section 2-11-24, is planning to develop the 40 acres purchase of the Occidental.

At Midway, A. B. Canfield, on section 23-12-24, is down about 1000 feet with good showing of oil sand. The Acme, on section 35-12-24, is building rig for well No. 4. The Sunset Monarch, on section 26-12-23, is rigging up on well No. 1. The Monte Cristo, on section 32-12-23, is 900 deep

on well No. 1. Porter & Scribner, on section 24-12-23, are drilling on well No. 1.

There is considerable dissatisfaction expressed on the bill fathered by Congressman Smith, now before Congress. As it is now drawn it would permit the capitalist to control thousands of acres of oil land. What is most needed, as the oil men here express themselves, is an amendment to the present placer mining laws to fit the oil business. The most needed feature mentioned to protect the poor man would be a protecting clause wherein the locator would have two years to develop enough oil to show the character of the land, and such other safeguards as would prevent jumping where an honest effort was being made by the mineral locator.

SANTA MARIA OIL FIELDS.*

Editor California Derrick:—In the rehabilitation of a State oil journal you have again called on me for a Santa Maria oil report, and as much as I would like to refuse the continuous call for news of this field, you have ruled such a disposition out of order and I am obliged to say something again on this well-worn topic.

After the lapse of something over four months conditions have still remained much the same in this field. The easterly field has shown one more well to come in on the Palmer's Stendel lease. The most successful find of the year. In fact, the most favorable oil strike since the famous Hartnell gusher of 1905, has been the Union Oil Co.'s Squires well No. 10, in the extreme western part of the field, where only faith and experienced workmanship could ever have accomplished anything, a flowing well was finally struck at 3900 feet, nearly 1000 feet below the average of other wells. This well, after a steady flow of over three months, still gives out a full 3500 barrels of oil daily. That is that one well alone is flowing at the rate of 100,000 barrels a year, and while we may expect it to run down somewhat it still would be better than a dozen average wells.

These new finds help to maintain an increased production of the field, especially for the Union Oil Co., that has the largest holdings and by far the largest number of wells scattered through the field.

The Union Oil Co., has secured since the first of the year, and additional large tract of oil lands in the easterly field, the well-known Bell tract of 4000 acres adjoining the Palmer Oil Co. the north end of which adjoins its productive well. The Union Oil Co. has already fully two-thirds of the productions of this field and with the increased developments it will still further enlarge its production. In owning land in fee simple it pays no rents or royalties to outside parties.

In recently going over the field we notice the improvement in roadways increased tankages and other improved operating facilities in the Union and in the adjacent Pinal and Brookshire Oil Companies.

No storage of any kind exists in the field and the oil as quickly as it comes to the surface is shipped and sold. Recently the Standard Oil Co. has found it necessary to engage some of the Union Oil Co.'s high gravity oils for its own refineries, a thing in itself showing the greatest evidence of the scarcity of oil for refining purposes, as we learn they paid a very high price for this oil. The Union Oil Co., as well as other companies, has advanced the local price of oil from 50 to 75 per cent, and contracts have been readily signed at this advanced price.

Considerable activity seems going on on the Newlove ranch, well No. 17 or 18 is under way with all grades of completion in seven other wells. This field has turned out about an average of the others, but has given no striking well, as in some other localities. Wells near the Graciosa Oil Co.'s line are not as good as those northerly in the same ranch, being too close to a common pool drained by the Graciosa Oil Co. and the Western Union Oil Co.'s wells. This brings us to the question of the water scare in the field.

The water problem is made more of by outsiders than insiders, it is an unealled-for scare, the proper steps having already been taken by the United Oil Companies to keep water out of future wells, and those few that already have water in are being cemented off to stop the inflow. The fact is that wells near the Western Union and the Graciosa Oil Co. and the Newlove ranch's south line are the only ones affected, and they are not affected half as badly as reported. The production of this part of the field has never been over 15 per cent of the total amount, and now new wells are being planned south of the main slump hole, one of which, on the Graciosa, is already in oil at some distance from the other wells. The minimum has already been reached and the increased production even here is looked for.

As deep as the wells are in this field, it is erroneous to suppose that they will not slowly decrease in production, the fact that they are but slowly lowering their annual production shows the merits of these deep wells have compared with wells elsewhere with the exception of two or three localities wells have not been bored as closely here as elsewhere in proven territory because the field is very large and scattered and wells expensive to drill and the land relatively cheap. Some wells have already a record of four and five years' production to their credit.

We have often been asked for an estimate of the production of this field. As near as we can ascertain, we give the following estimate for monthly productions:

Union Oil Co., with its affiliated companies	550,000 bbls.
West. Union and Graciosa, about	110,000 bbls.
Independent Companies (Pinal, Brookshire, Pennsylvania Petroleum, Rice Ranch, Hall & Hall, Dome) about	175,000 bbls

This makes a total production under present yield of 10,000,000 barrels per annum. By far the greater part of this oil is pipe-lined to Port Harford, a smaller amount to Gaviota landing on Santa Barbara channel. A small fraction finds its way to the Narrow Gauge and Southern Pacific Railways.

Notwithstanding the average increase of the production of the field, the price of oil stocks has been steadily beared down on the Los Angeles stock market. Of course, the money depression has been the cause of this decline. Even dividend-paying stocks have met the same fate. Exaggerated reports about water in the wells has had the further effect of unjustly depressing oil stock values.

Of field work the Union is, as usual, the most active and forward in development. Certain parts of the field, for the company's own reasons, remains undeveloped, while other parts are pushed to the front. Recently the westerly ends of the Hartnell lease and the Santa Maria Oil and Gas lease have been favored with further new derricks. The west end of these leases shows considerable wash formations on top, but, notwithstanding the depth of these wells to shales, they are being bored where easier boring is neglected: In this instance it is probably due to the big gusher that came in last December. The new purchase by the Union Oil Co. of the Bell tract will give them a further opportunity for scattering out wells which here and there give the opportunity for wells out of the ordinary yield.

The Pinal Oil Co. still has five wells under the drill. No. 17, near the Brookshire and Union Oil Co.'s line, is the latest that has come in. They have, however, had some unusually slow drilling to contend with, and have not made their usual headway with their new wells. They have improved their plant, increased store-houses and electric light and power plants and general improvements are quite marked in the last twelve months.

Brookshire Oil Co. is deepening their No. 3, which had never yielded much of anything—the black sheep well of the company. Three more wells are being bored, some of them further north than anything heretofore. The shale dips here, but not enough to make drilling difficult. The capacity of the northerly wells when completed will be looked for very expectantly to note how the oil measures yield towards the north of the field. Since our last report Brookshire has a new Superintendent, F. J. Burns, who gives the company his full attention. Brookshire No. 5 well is a great gaser, as well as producer. It supplies Santa Maria City with all its gas for lighting and heating, a large number of rigs in the field, and then has a surplus to burn up night and day and keeps up its supply without the least decrease. No. 6 is about ready to come in as a fine well. No. 7 is through the sand in shale.

Pennsylvania Oil Co. has its No. 4 as a well-established well, while its No. 3 is still laboring under the throes of the driller, who is trying to correct its crookedness, and we hope they will be successful. No. 5 well is being bored. The two producing wells alone yield about 12,000 barrels per month.

Rice Ranch, adjoining, is making an improved record. No. 4 is now in and is a good well, with No. 5 over 800 feet down. The production of this small piece of territory with four wells keeps up remarkably well, yielding an average, as we are told, about 900 barrels a day, or fully 25,000 for the last month.

Hall & Hall are rehabilitating one of their wells; two are delivering oil and still another is in oil. The Company has developed water in the Sisquoc field and has brought water over sucessfully a distance of some twelve miles, thus adding a permanent and large water supply to this end of the field.

As is well known around here, Palmer Oil Co. have at last arranged to sell their production to the Associated Oil Co. A new pipe line is to be built from the Palmer's south line over the Valley Divide to the Carreaga Station, where a pumping plant will be installed and the eight-inch pipe line runs the oil to Gaviota landing.

Several more wells are to be drilled in the Palmer Oil Co.'s easterly addition on the Stendel Triplett lease, which has its first well in oil and is down about 2,000 feet, having passed quite a stratum of oil sands. Between these two wells the Associated Oil Co. is putting down a derrick and for once in this field they have a good opportunity of getting oil.

Foxen Canyon well have passed the 1800 foot depth in brown shale and doing nicely for the time they are drilling.

We have recently heard good news from the Bear Creek well, close to surf. They are down 2,000 feet in bituminized shales and a good showing of oil. This is one of the few wells in the Lompoc field that have struck oil at reasonably shallow distances.

Lompoc Oil & Development Co. deserve special credit for their persistency, as this is their third year since the hole was first begun. They are now about 3,300 feet down in oil formation.

Oil wells of the Crocker Co.'s interests are being bored near Santa Ynez and near Los Olivos. The formation is shaley, but they are not deep enough as yet for any test.

*L. E. Blochman, Secretary Santa Maria Chamber of Commerce.

SOUTHERN FIELDS.

Conditions in connection with the oil industry were never more encouraging or promised better for the South. The general business depression over the entire country had no effect on the petroleum industry, and while everything else apparently was "going down," the price of oil was "going up." As predicted more than a year ago, the large foreign demand which had been established for California oil, together with an increasing market at home, and a declining production in many fields, brought the oil man face to face with a shortage. The demand had arrived at a point where it exceeded the production by thousands of barrels daily. This, of course, could result in but one thing—an attempt to produce more oil, and field activity was therefore stimulated to a remarkable degree. Six months ago the Union Oil Company was shipping oil into the Los Angeles market by boat from the north. So successful have been the efforts of producers to bring in new wells that the Union is today shipping southern oil north, loading at San Pedro. This oil is obtained from the Salt Lake, Fullerton and Whittier fields.

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Los Angeles Field.

In speaking of the Los Angeles field it should be stated that both the old city field and the western extension, or so-called Salt Lake pool, are included. The old city field, of course, is not much of a factor, but with the advance in price much cleaning out and deepening of old holes has been done, and today the daily production of the old field approximates 1,600 barrels. The Salt Lake pool is at present attracting more attention than any other southern district on account of the extent of the productive territory. Within the past few months developments toward the north and west indicate that the belt extends along the Santa Monica mountain range, clear to the ocean. At all events, a regular old-time oil excitement was threatened for some time. Leasers by the score made a rush for the section and everything that looked like possible oil land, and a great deal that did not, was eagerly snatched up, in some instances large bonuses and heavy royalties being given. One case, for instance, is that of E. L. Doheny and associates, who paid $50,000 bonus and agreed to one-sixth royalty on a lease of 80 acres. Of course, this is considered gilt-edged property, but nothing is gilt-edged, it might be stated, until it is producing the "gilt." What gave this land its high value was the remarkable strike of Pitcher & Garbutt, a branch of the Union Oil Company, and also one by the Associated Oil Company about half a mile distant from the property in question. One of these mills started off at 2500 barrels per day, and the other at 1700 barrels. The depth of each is about 1800 feet, much shallower than wells farther east. It was expected that as developments continued west the territory would get deeper, but this seems to indicate a sort of undulating or blanket formation. This, in fact, is what started the excitement. Drilling is going on now almost within the limits of the town of Sherman, and two rigs are running in the vicinity of Sawtelle, about six miles to the west. These two prospect holes are not deep enough to make an estimate of the value of the land, but the operators are confident they will "hit it" at less than 2000 feet.

The production of this pool has jumped to between 10,000 and 12,000 barrels per day. The local markets consume from 300,000 to 350,000 per month, so it is seen this market could be taken care of by the Salt Lake field, and there might be a considerable surplus were there not a demand in the north for our oil.

The price has declined slightly in the past 30 days. A month ago from 85 cents to $1.00 was paid for daily balances, and no long time contracts being made at less than 90 cents. Today daily balances bring from 80 to 90 cents. Thirty thousand barrels were offered the county yesterday for road purposes for 75 cents per barrel. The bidder putting in this figure was the Associated Oil Company.

Fullerton Field.

No field of the south has shown greater improvement in the past year than the Fullerton field and it is without doubt destined to be one of the great fields of the State, if indeed it can not be now so classed. There are now thirty strings of tools running, and operations are being carried on from the original Olinda pool clear to Brea Canyon, and the recent strike of the Orange Oil Company west of Brea Canyon practically proves the territory through to the old Puente field, a total distance of twelve miles. The Union Oil Company has a pump station in this field and pipe-lines connecting it with Los Angeles and San Pedro harbor, and this company markets the entire product of the field except that of the Santa Fe, which, of course, uses its own oil. The price here ranges from 50 cents to 75 cents, being gauged on contracts held by the Union. The Union takes the oil, applies it on certain contracts, deducting a small pipeage charge, and the company furnishing the oil participates in the receipts. One con-

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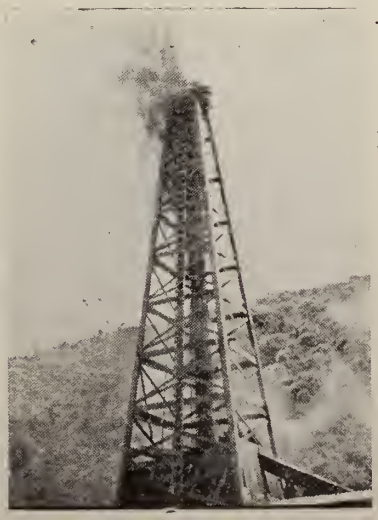

Correspondence Solicited

W. E. Youle, San Luis Obispo, Cal.

tract the Union is filling was taken several years ago in competition with the Associated, and the participants in this contract neeessarily receive a low price for their product. The daily output of the field is at present about 9000 barrels.

EASTERN EXPORTS

Following are the Exports of Mineral Oils from the Eastern ports of the United States for the month of January, 1908:

Articles and Customs Districts.	Quantities. Gallons.	Values. Dollars.
Crude:		
New York	1,250	94
Philadelphia	3,167,917	216,816
Galveston	15,293	765
Sabine (a)	2,561,874	76,856
Total	5,746,334	294,531
Naphthas:		
Baltimore	.....	.....
Boston and Charlestown	4,650	706
New York	1,292,248	178,243
Philadelphia	862,118	85,586
Total	2,159,016	264,535
Illuminating:		
Baltimore	279	26
Boston and Charlestown	7,727	871
New York	45,747,926	3,214,300
Philadelphia	27,340,123	1,610,815
Galveston	.....	.....
Sabine (a)	1,698,221	79,670
Total	74,794,276	4,905,682
Lubricating and Paraffin:		
Baltimore	466,262	69,002
Boston and Charlestown	26,303	4,823
New York	9,487,800	1,304,347
Philadelphia	2,943,532	363,454
Galveston	8,580	1,115
Sabine (a)	.....	.....
Total	12,932,477	1,742,741
Residuum:		
Boston and Charlestown	.....	.....
New York	5,000	400
Philadelphia	3,355,609	103,410
Galveston	.....	.....
Sabine (a)	39,018	2,323
Total	3,399,627	106,133
Total Mineral Oils:		
Baltimore	466,541	69,028
Boston and Charlestown	38,680	6,400
New York	56,534,224	4,697,384
Philadelphia	37,669,299	2,380,081
Galveston	23,873	1,880
Sabine (a)	4,299,113	158,849
Total	99,031,730	7,313,622

LATEST OIL STOCK QUOTATIONS.

Following are the latest quotations for stocks of oil companies listed on the California Stock and Oil Exchange:

	Bid.	Asked		Bid.	Asked
Alma	.50	1.00	Monte Cristo	.30	.50
Assoc. Oil Tr. Cer.	28.50	30.00	Nevada County	....	.66
Associated Bonds, 5s.	74.00	83.00	Occidental	.05	....
Brookshire	1.50	2.00	Peerless	3.00	....
Caribou	6.00	10.00	Piedmont	.14	....
Claremont	....	1.10	Radium	....	.30
Esperanza	1.00	....	Rice Ranch	....	1.15
Fauna	....	.03	S. F. & McKittrick	8.50	10.00
Four	....	.16	Shawmut	....	1.00
Fulton	....	2.00	Sovereign	....	.20
Graciosa	....	2.00	Sterling	2.10	2.20
Home	.05	.08	Sunset Monarch	.20	.26
Imperial	19.00	30.00	Thirty-Three	....	4.00
Independence	.23	....	Union	202.50	220.00
Junction	.34	.35	West Shore	2.00	....
Kern	.10	....	Wolverine	.25	....
Linda Vista	.25	....	Western Union	....	1.20
McKittrick	.20	.22			

Following are the latest quotations for oil stocks listed on the Los Angeles Stock Exchange:

	Bid.	Asked.		Bid.	Asked.
Amalgamated Oil	54.25	63.00	New Pa. Pet. Co.	.78½	.95
Associated Oil	29.37½	30.00	Pinal Oil Co.	....	19.00
Brookshire Oil	....	2.15	Olinda Oil Co.	.11	.11½
Central	.70	.82	Piru Oil & L. Co.	.06	.14
Columbia	.84	.92	Reed Crude	.10	....
Continental	.17½	.25	Rice Ranch Oil Co.	.85	1.20
Elk Con. Oil Co.	.06	.18½	Union	206.50	213.00
Fullerton Oil	.35	....	Union Prov. Co.	....	215.00
Globe	.12½	.15	United Petroleum	325.00	375.00
Mexican Pet.	1.32	1.45	Western Union	76.00	100.00

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THE OIL AUTHORITY OF THE PACIFIC COAST

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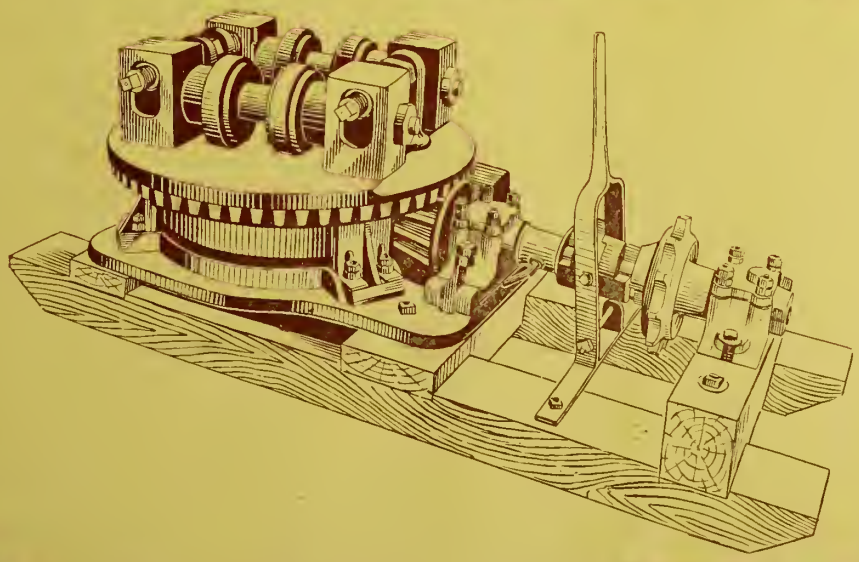
PARKER



ROTARY.

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THE OIL AUTHORITY OF THE PACIFIC COAST

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CROCKERITE, A NEW PRINCIPLE OF ASPHALTUM

By A. S. Cooper, E. M., Ex-State Mineralogist, and H. N. Cooper, Chemist, University of California.

Editor's Note.—The Messrs. Cooper have discovered a fourth principle to be added to the three distinct principles heretofore known to exist in definite proportions in asphaltum. This new principle has been appropriately named Crockerite in honor of Mr. Henry J. Crocker of San Francisco, a millionaire capitalist, banker and extensive operator in California petroleum. Mr. A. S. Cooper's position as a mining engineer, and former State Mineralogist, entitles him to the consideration of expert oil men. The following article describes with scientific detail, aided by photographic illustrations, this new principle of asphaltum.

Asphaltum.

Asphaltum is composed of carbon, hydrogen and sulphur in varying proportions, and there is also found chemically combined in undefined quantities, oxygen and nitrogen.

In asphaltum there are three principles sufficiently distinct to be easily separated by several known solvents. These principles do not exist in asphaltum in definite proportions. The three principles contained in asphaltum and separable by known solvents are:

1st. A yellow resin, sometimes brown, solvent in absolute alcohol.

2d. A brownish-black resin, soluble in ether and insoluble in alcohol. These principles taken together are known as petrolene.

3d. A black substance having a conchoidal fracture dissolving neither in alcohol nor in ether, but perfectly soluble in chloroform, carbon bisulphide and spirits of terpentine. This principle known as asphaltum.

To the above a fourth principle has been discovered by the authors and described hereafter, which is not soluble in any known solvents of petrolene or asphaltene.

This principle has been named Crockerite, in honor of Henry J. Crocker, a large operator in the oil fields of California.

Crockerite.

Crockerite exists in vast quantities throughout the rocks in the oil fields of California, and is a good indication of the presence of petroleum oil.

Its presence in rocks can only be determined by heat and not by any known solvents of asphaltum.

Crockerite may exist without petrolene or asphaltene being present. It may also be absent from asphaltum.

Bitumo-silicified shales were bituminized before they were silicified. They were bituminized before they were crumpled and bent. They were crumpled before they were silicified, otherwise, instead of crumpling, they would have been broken into thousands of fragments.

Frequently after bituminization, crumpling and silicification these shales have been broken and shattered; and many times after breaking and shattering they have been filled with petroleum oil or asphaltum.

The accumulation of petroleum oil in the Mount Pinal oil fields is in the cracks and fissures of this bitumo-silicified shale. South of the old Lompoc Landing the cracks and fissures in these bitumo-silicified shales are filled with asphaltum varying in hardness from tacky to shining black. Clots of heavy oil ascend in the Pacific Ocean from these shales.

These shales are not of igneous origin, as is claimed by some geologists, as they are stratified bituminized and frequently contain crystals. One archeologist wrongly claimed that black arrow heads made by the Indians from these shales to be obsidian.

Pieces of asphaltum are found in these shales completely surrounded and incased by bitumo-silicified shale. Sometimes this asphaltum is hard and shining; at others times, tacky.

The bitumo-silicified and silicified parts of this shale are hard and flinty and in many instances crumpled.

When two pieces are briskly struck together they emit an odor like burnt rubber.

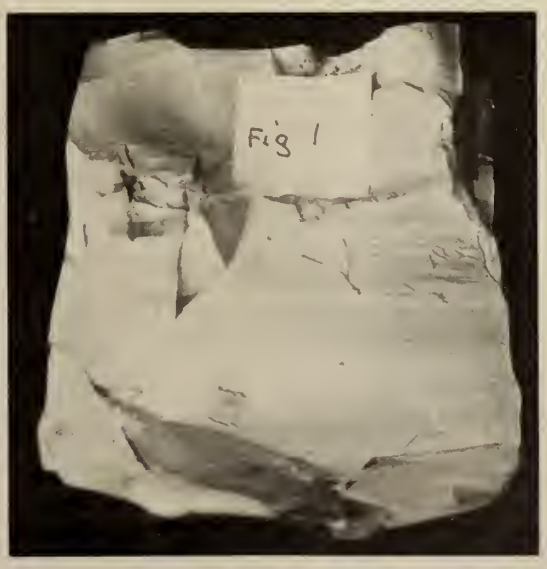

Figure 1—Shale. Laminae darkened by Crockerite.

The coloring matter of numerous black or dark colored rocks has been attributed to carbonaceous matter, when in reality the coloring of those rocks was caused by Crockerite.

The laminae of these shales are rendered very distinct by the bituminization of some laminae and the lesser bituminization of others. The extent of the bituminization of the different laminae depends upon the different porosity of the various laminae before they were silicified.

The bitumo-silicified shales are found overlying very thick beds of sandstone. The siliceous waters probably originated in these beds of sandstone. These shales are seldom found in the vicinity of metamorphic rocks.

These shales are interstratified with other shales.

Frequently these bitumo-silicified shales are harder than quartz. In beds of sand and bituminized sand fragments of shale with their edges rounded are found. Their exterior looks like ordinary

shale, but when broken they are seen to be silicified and in some instances bitumo-silicified. These fragments of shale were rounded by attrition, deposited in the sands and then silicified or bitumo-silicified. If they were rounded by Attrition and had been silicified before deposition they would have a semi-transparent appearance and would not be rough nor have a shaly color. It would seem that substances having small interspaces, like shale, trees, etc., are readily silicified by circulating siliceous waters, whereas sandstones and other rocks having large interspaces are silicified with difficulty. This is attested by substances of small interspaces being found silicified in substances with large interspaces and not silicified. If this be the case, silicified and bitumo-silicified shales are probably formed by circulating siliceous waters.

As corroborating evidence that this is the case these rocks are found in the lower or drainage area of anticlines. The lower portions or saddles of the Jalama, Escondido, El Jaro and other anticlines are bitumo-silicified.

From the foregoing description the following can be deduced: That bitumo-silicified shales show that the anticline in which they exist is bituminized. That when the petroleum entered the shales before they were silicified it was in a very liquid condition in order to have entered the close grained rocks. That they are not igneous but have been made by siliceous waters. That these rocks may overlie soft shales and do overlie sandstones. That when cracked and fissured and under cover they do act as reservoirs for the accumulation of petroleum oil.

The bitumen in bitumo-silicified shales is insoluble in the usual solvents of bitumen and there is present in other rocks bitumen which is insoluble in the usual solvents of bitumen. When these rocks are struck a brisk glancing blow or rubbed rapidly together they emit an odor like burnt rubber. When a small quantity of bitumen is present that is soluble in the usual solvents of petroleum then when these rocks are struck or rubbed as described above, they emit a combined odor of burnt rubber and petroleum.

About 5 grams of bitumo-silicified shales containing Crockerite were placed in a platinum dish and strong hydrofiouric acid poured over it in excess. A strong ebulition of gas occurred accompanied with much heating. After the large excess of hydrofiouric acid had been poured upon the finely ground bituminized shale and the ebulition had ceased the platinum dish was set on the sand bath and kept at a gentle heat for twelve hours. Then the supernatent clear acid was decanted off and water poured into the dish, and, after settling several hours, the clear liquid was decanted off. This decantation was repeated three times till the amount of salts left in solution was evidently small. The flocculent brown residue remaining behind was obtained as a pasty layer on the bottom of the dish when the water and remaining acid were evaporated by gentle heat on the sand bath.

The pasty residue when examined under the microscope shows tiny prismatic points which indicates that the Crockerite exists in this residue in a finely divided state.

At the boiling point of "Glymol," which is about 250 deg. C., there were no signs of this residue melting—it simply remained at the bottom of the boiling "Glymol" as an amorphous brownish-black powder. When heated on platinum foil there are no signs of melting: on the contrary, decomposition commences with the emission of white oil vapors and no melting takes place.

This residue is composed entirely of organic matter as is proved by its rapid combustion in melted potassium chlorate and by the fact that the char remaining behind when a portion of this pasty residue heated on platinum foil to almost redness caught fire and glowed like tinder till consumed, a slight ash remaining behind. When heated with concentrated sulphuric acid the acid turned black and sulphur dioxide was given off; proving the presence of organic matter which reduced the sulphuric acid.

When heated in an open tube, first the water condenses on the sides of the tube—then drops of oil and the odor is just like the cracked odor that is noticed in distilling a heavy oil.

When heated on platinum foil a white smoke comes off which smells of petroleum oil and burnt rubber.

A portion of this pasty mass was mixed with sodium carbonate and placed on a 10-cent piece and then heated to redness; the silver was colored black, showing the presence of sulphur.

Crockerite is insoluble in the ordinary solvents of asphaltum such as chloroform, carbon bisulphide, heavy petroleum oil, etc., and will not even discolor them. It is absolutely insoluble in "Glymol" (which is a clear odorless oil useful for detecting minute traces of difficultly soluble asphaltum). It is insoluble in cold strong acids, but is soluble (yellowish-brown solution) in fuming nitric and completely soluble in boiling fuming nitric. When the excess of nitric acid was evaporated the compound remaining had a not unpleasant aromatic odor.

These reactions would tend to indicate that the bitumen in bitumo-silicified shales is vulcanized.

To vulcanize rubber it is mixed at a moderate heat with from 7 to 10 per cent of flowers of sulphur and subsequently "cured" by superheated steam at from 260 to 280 Fahr. In distilling California oils that contain sulphur, but a small quantity of sulphur compounds come off at a low heat, but they are very plentiful at a high temperature. When petroleum oil is heated with sulphur asphaltum is formed.

When rubber contains but a small quantity of sulphur it is not vulcanized. Neither could rubber be vulcanized when mixed with a large amount of petroleum oil, its solvent.

When petroleum oil enters porous rocks of small interspaces, such as shales, by evaporation, either by the air or otherwise, the volatile parts of the oil are removed and the bitumen remaining in

Fig. 2 Bitumo-silicified Shale. Dark bands are silicified and contain Crockerite.

the porous rock becomes brown and porous; a condition which is required in order to permit the entrance of hot silicious waters.

Analysis of asphaltum shows that it contains about 6 or 7 per cent of sulphur, whereas crude petroleum oil rarely contains 3 per cent. By evaporation the oil in the rocks is changed to asphaltum and then to brown porous asphaltum. By this evaporation the amount of sulphur is increased to, say, about 7 to 10 per cent (about as much sulphur as is required to vulcanize India rubber.) When the brown porous asphalt is submitted to silicious or other waters at a temperature of 260 or 280 Fahr. it is converted to Crockerite. In a formation and under pressure these silicious waters could easily acquire this heat through the same heat that produces metamorphism.

At a depth of 100 feet water could have a temperature of 260 Fahr. without boiling. Vulcanization probably commences at or near the melting point of sulphur, which is 237 to 248 Fahr. If this be true, Crockerite could be produced near the surface and therefore bitumo-silicified shales could be produced near the surface. These hot silicious waters could have ascended through fissures from a depth and flowing and percolating through the bituminized shales, which lie at the lower parts or saddles of anticlinal folds, and could produce Crockerite and bitumo-silicified shales. Crockerite is not necessarily an indication that petroleum oil throughout an entire anticlinal fold has been subjected to a heat of 260 Fahr.

DYE-MAKING FROM CALIFORNIA PETROLEUM

By J. C. Christensen, B. S.

Editor's Note.—For the first article in this series see Christensen: The Refining of Crude Oil—California Derrick, Vol. I, page 3. In the present article Mr. Christensen shows that the obtaining of Aniline Dyes from the petroleum oils of California is not only possible, but practicable, and would prove profitable. His scientific reasoning is worthy of careful study.

Many chemists have expressed themselves through the petroleum journals upon the possibility of obtaining aniline dyes from mineral oil, particularly from the petroleums of Russia and Roumania, and I must here acknowledge my indebtedness to an article on Roumanian petroleum by Prof. Aisinmann, published in the November issue of the Petroleum Review, for part of the material found in this paper. While it is generally agreed that it is possible to make dyes from these oils, very few have expressed the opinion that it would prove practicable or profitable; and in Russia, where the quantity of acid used in the refining process is exceedingly small, dye-making from petroleum would indeed be considered wholly impracticable. In California, where large quantities of acid are used per unit of oil to be refined, the problem presents a different aspect. While our petroleum resembles the Russian; and more closely the Roumanian oil, it differs therefrom in many important respects, but chiefly in the content of aromatic hydrocarbons, as shown by the greater density of the distillates obtained from our oils when compared to Roumanian distillates of the same boiling point. An intimate acquaintance with the practical working of oil refineries, as well as with the theoretical side of the subject, has convinced the author that not only is it possible to make dyes from California crude oil, but that the industry would also prove profitable.

The efforts of chemists (particularly German chemists) to utilize coal tar—then a waste product in the manufacture of coal gas—led to the development of the coal-tar color industry, an industry that today is of world-wide importance, giving employment to thousands of men, and profitable investment to immense sums of money. The abandonment of the old method of making gas from coal, and the introduction of the cheaper water-gas and oil-gas, makes the problem of obtaining dyes from petroleum one of immediate interest. In the process of making oil-gas from crude oil, large quantities of naphthaline are obtained, which, though today a waste product, may be easily recovered, purified, at trifling cost, and combined with the products of the aromatic oils obtained from the acid sludge of the oil refinery to produce the most brilliant and permanent dyes.

Divers chemists have found that our California oils yield small but significant amounts of all the aromatic series of hydrocarbons—benzene, toluene, xylene, etc.—and it is from these aromatic hydrocarbons that the aniline dyes are made. The author has obtained one-half of one per cent of benzene, one-four of one per cent of toluene, and various percentages of other aromatic oils from crude petroleum. It would be impracticable, if not impossible, to attempt to separate such small quantities of dye-making material from the crude oil itself; if indeed they exist in the crude. Many chemists consider them products of distillation or of acid refining. But the very process of refining, to which all petroleums are subjected, affords us the means of cheaply obtaining the small quantity of dye-making material contained in the crude. Whenever a petroleum distillate—especially one of low gravity—is subjected to treatment with ordinary or fuming sulphuric acid, the aromatic oils combine with the acid and are consequently to be found (as sulphuric acids) in the sludge. If, then, the sludge is treated with super-heated steam to recover the acid therefrom*, or if the sludge be sprayed into red-hot retort, the sulphuric acids are decomposed, yielding the aromatic oils, which distill off and may be easily condensed. Thus in utilizing a waste product, the acid sludge, we have the key to the solution of the problem of making dyes from petroleum.

The aromatic oils obtained in the foregoing process are impure, just as the same oils when obtained from coal-tar are impure, and must be rectified by distillation. The carefully neutralized oil is put into a still fitted with a dephlegmator—a still such as is used in the rectification of alcohol—and the distillation conducted without the aid of steam. The distillates are separated according to their boiling points: the fraction boiling between 79 and 82 degrees centigrade is chiefly benzine (C6H6), the fraction obtained between 110 and 112 deg. C. to toluene (C7H9), that between 137 and 141 deg. C. is xylene (C8H10), etc. Oils thus fractionated are usually sufficiently pure for dye-making, but if not, are again distilled; or they may be more carefully purified by freezing, when the pure oils crystallize and are filtered from the impurities.

The purified aromatic oils are then "nitrated" by treating them with a mixture of nitric and sulphuric acids, the nitrated oil separated from the excess of acid, neutralized, and purified by distillation. The nitrated oil boils at a very much higher temperature than the unnitrated oil, and hence may be obtained in a very pure state. The impurities are usually unattacked by the nitrating mixture, but if attacked, are decomposed during the distillation, so that in any event we obtain the nitrated oil in very pure form.

From this point the manufacture of dyes becomes too complex for presentation in a paper of this character, and the author refers those who wish to pursue the subject further to any organic chemistry, and especially to Meyer's "Die Steinkohlenteer."

OIL MARKET ABROAD.

Russian Position.

The quotations for crude petroleum and its products are weaker, with the exception of kerosene.

Crude petroleum for prompt delivery is now 27½ copecks per pood, a reduction of ½ copeck per pood, and for forward delivery the quotation has fallen ½ copeck per pood and is now 28½ copecks per pood, free on rail Baku.

There is a reduction in the quotation for residuals for prompt and forward delivery of ½ copeck per pood. The quotation is now, for prompt delivery 28 copecks per pood, and for forward delivery 28½ copecks per pood free on rail Baku.

Kerosene for prompt delivery is still quoted at 33 copecks per pood free on rail Baku.

The total production from the Baku oilfields during February was 34,798,000 poods, and of this 17,159,112 poods were produced, all by baling, during the first fifteen days. The February production shows a reduction of over 1,000,000 poods compared with that for January, allowing for the difference in the duration of the two months.

The whole production of the Grosnyi oilfields for 1907 was 39,062,419 poods. These figures show an increase compared with the production of the previous year of 3,230,232 poods.

English Market Report.

The market for Russian and American lamp oils in London and Liverpool remains without change. The market is quiet and weak, and buyers are holding off in consequence of an opinion which seems to prevail that a fall will shortly occur.

The quotations are as follows:

LONDON—Russian oil, 5⅜d. ex wharf in barrels; American oil, 6½d. ex wharf in barrels.

LIVERPOOL—Russian oil, 5⅜d.@5⅞d. ex wharf in barrels; American oil, 6¾d.@6⅞d. ex wharf in barrels.

Indian Market Report.

There is only one small change in the quotations to record. American case oil in Calcutta shows an increase of 2 annas, and is now quoted at rupees 4. 10. 0. The market remains firm and steady. The deliveries fell during the first part of the period under review, but an increase took place towards the latter part of the time.

The quotations are as follows:

	Rupees.		
BOMBAY—			
American case oil	4.	12.	0.
Russian case oil	4.	8.	0.
"Elephant" oil in tins	3.	13.	6.
Sumatra "Rising Sun" in tins	3.	16.	0.
Burmah oil in bulk	2.	14.	0.
KARACHI—			
American case oil	4.	4.	0.
Burmah oil in tins	3.	8.	0.
Borneo oil in tins	3.	8.	0.
Sumatra oil in bulk	3.	6.	0.
American oil in bulk	3.	5.	0.
CALCUTTA—			
American case oil	4	10..	0.
Russian case oil	4.	4.	0.
Burmah oil in bulk	2.	14.	0.
Borneo oil in bulk	3.	0.	6.
Sumatra oil in bulk	3.	3.	6.
American oil in bulk	3.	3.	6.

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GOVERNMENT OIL INVESTIGATION

Review of Statistical and Technical Facts Submitted to the President by the Commissioner of Corporations.

By Lewis H. Eddy.

Editor's Note.—The preceding articles in this series in the March issue of the Derrick were on Crude Oil Production, and the Relative Values of Various Crude Oils. Article IV in the present issue regarding Lubricating Oils will be continued in the May issue, owing to a lack of space for the whole of it in the present issue.

III.

REFINING OPERATIONS.

Plants—Crude Supply—Refined Production—Control.

The report of the Commissioner of Corporations deals with various years from the beginning of the petroleum industry down to 1906, but throughout the report the particular year in which the statisties are the most complete is 1904. So the essential matters referred to in the present article relating to the commercial feature of the refining operations in the United States are chiefly confined to the year 1904.

There were, according to the report, in operation in the United States 98 refineries (exclusive of asphalt plants), 75 of which were owned and controlled by independent refiners, 18 by the Standard Oil Co. direct, and 5 by companies affiliated with the Standard Oil Co.

The territorial situation and the relation of location of the refineries to the market area are shown in the report by a series of maps presenting six general districts, two of which (Seaboard and Whiting) are subdivided, making nine in all.

For the general purpose of this review the list of Standard Oil Co. refineries is given in the order of the districts, and the independent refineries in the order of the States in which they are situated. The list of the Standard locations includes both the direct and the affiliated concerns. These lists indicate in a general way the market territories or areas covered by the several refineries.

The number of refineries at each situation is not here attempted, but in the table relating to crude oil supply a seggregation of plants is made, which is of more practical value.

Situation of Standard and Affiliated Refineries by Districts.

1. New York, Bayonne, Philadelphia, Baltimore.
2. Pittsburg, Franklin, Olean, Buffalo.
3. Parkersburg.
4. Cleveland, Lima.
5. Whiting.
6. Sugar Creek (Mo.), Neodesha (Kan.).
7. Corsicana, Chaison (Texas).
8. Florence (Colo.).
9. Richmond (Cal.).

Situation of Independent Refineries by States.

1. New York:
   Olean, Wellsville.
2. New Jersey:
   Bayonne, Edgewater.
3. Pennsylvania:
   Bradford, North Warren, Struthers, Clarendon, Titusville, Oil City, Rouseville, Reno, Emlenton, Karns City, Petrolia, Pittsburg, Allegheny, Neville Island, Coraopolis, Freedom, Washington, Marcus Hook.
4. Ohio:
   Marietta, Cleveland, Findlay, Toledo.
5. Texas:
   Port Arthur, Houston, Corsicana, Beaumont.
6. Louisiana:
   New Orleans.
7. Kansas:
   Humboldt.
8. Wyoming:
   Caspar.
9. California:
   Oakland, Fruitvale, Stockyards, Oleum, Rodeo, Fresno, Bakersfield, Carpinteria, Obispo, Chino, Los Angeles.

The following table, taken from the Commissioner's report, presents concisely the quantity of crude oil supplied to the refineries by each of the seven fields mentioned, and the relative proportions used by the Standard and the Independents, in the year 1904. It is well to bear in mind that though the Standard consumption represents only 23 refineries to 75 operated by the Independents, the Standard plants are larger, and this in a measure accounts for the difference in consumption.

Only three Independent refineries handling Appalachian crude were in operation in 1904 at the Atlantic seaboard, while the largest of the Standard refineries are situated in that section. In California there are 17 Independent refineries and only one Standard refinery, but the Standard used more than three and a half million barrels of crude, while the Independents used less than one million.

Refinery Consumption of Crude Oil of Each Field in 1904.
(In Barrels of 42 Gallons.)

Fields.	By Standard.	By Independents.	Total.	Standard.
Appalachian	22,253,000	5,375,000	27,628,000	80.5%
Lima-Indiana	22,908,000	1,322,000	24,230,000	94.5%
Mid-Continent	1,046,000	10,600	1,056,600	99.1%
Colo. & Wyoming	435,000	5,000	440,000	98.9%
California	3,317,000	850,000	4,167,000	79.6%
SE. Texas & La.	5,284,000	2,563,000	7,847,000	67.3%
Corsicana	455,000	345,000	800,000	56.9%
Totals	55,698,000	10,470,600	66,168,600	84.2%

In regard to the following table showing the crude oil supplied to the Independent refineries the report says that these figures are for the most part based on the reports of the refineries to the Bureau of Corporations; and that while it is difficult to present a complete and accurate list of Independent refineries in operation at any given date, the list here given includes all the important Independent plants in operation in the year 1904, except the asphalt plants in California, which are omitted because they do not enter into competition with the Standard in the more important branches of its business.

The report does not present a similar table of Standard refineries showing the crude supply to each of the several groups, but contains a table showing the various groups of Standard and of affiliated concerns, and the quantities of refined products produced by each refinery in 1904; from this table and other items in the report the table here given of the crude supply to the Standard and affiliated concerns is made up.

The table of Standard and affiliated production above mentioned is presented, in condensed form, following the tables of crude oil supply.

Crude Oil Supply of Refineries in 1904.

Refineries and Fields.	No. of Plants.	No. of Bbls. of 42 Gals.
(a) **Independent Refineries using Appalachian Crude:**		
McKean Co., Pa., and Allegheny Co., N. Y.	3	644,000
Vicinity of Warren, Pa.	10	1,213,000
Titusville, Oil City and Venango Co., Pa.	10	1,885,000
Butler Co., Pa.	4	28,000
Pittsburg and S. W. Pa.	9	969,000
Vicinity Philadelphia and N. Y. Harbor	3	452,000
Ohio	3	184,000
Total Appalachian	42	5,375,000
Lima-Indiana Crude (all in Ohio)	5	1,322,000
Mid-Continent and Wyoming Crude	2	15,600
Gulf Crude (Texas 6, La. 2, Pa. 1)	9	2,908,000
California Crude	17	850,000
Total four fields	33	5,095,600
Total all fields (Independent)	75	10,470,600
(b) **Standard Oil Co. (and affiliated companies):**		
Atlantic Seaboard Refineries using Penn., Texas and Lima-Indiana crude	8	31,255,400
Ref's in or near Appalachian field using Penn., Kentucky, Lima-Ind. crude	5	5,866,600
Ref's in or near Lima-Ind. field using Lima-Indiana crude	3	10,185,000
Western Refineries using Mid-Continent crude	2	2,572,900
Colorado crude	2	422,000
California crude	1	3,317,000
Texas crude	2	2,059,100
Total all fields (Standard)	23	55,698,000

(a) Figures in this table correspond with figures in similar table in Commissioner's report.

(b) Figures in this table approximate, and estimated from, various items in Commissioner's report.

Output of Refined Oil by the Standard and Affiliated in 1904.

Situation of Refineries.	No. of Plants	Refined Oil Production Bbls. 50 Gals.
S. O. Co. direct:		
Atlantic Seaboard Refineries (excepting Tide Water Oil Co.)	7	14,533,417
Ref's in or near Appalachian field	5	2,047,458
Ref's in or near Lima-Ind. field	3	3,808,432
Ref's Western (excepting Texas and Colorado)	3	951,872
Total	18	21,341,179
S. O. affiliated:		
Tide Water Oil Co., Bayonne, N. J.	1	1,614,000
Ref's in Colorado	2	125,419
Ref's in Texas	2	403,691
Total	5	2,143,110
Aggregate S. O. (and affiliated) Co.	23	23,484,289

For the purpose of showing the proportionate control of the refining business by the Standard Oil Co., the Commissioner uses the statistics of illuminating oil production, being the only recent available data regarding finished products by the Standard. Taking the industry as a whole, the report says this product is by far the most important, both from the standpoint of quantity and value. As indicated by the above table and the statements of the report from which the following table is in part made up, the Commissioner apparently uses the terms "refined oil" and "illuminating oil" synonomously.

Referring to the data from which the last foregoing and the next following tables are made up, the Commissioner says:

"No statistics are available showing the output of other refined petroleum products by the Standard Oil Co. . . . but the relative yields . . . render it certain that the Standard controls, roughly, the same proportion of naphtha and lubricating oil."

Before proceeding to an examination of the following table, reference to the Commissioner's comment on the U. S. census returns as showing the great development of the petroleum industry since 1880 is here pertinent. Extensive tables are presented showing that in quantity of crude oil consumed increased from 17,417,455 barrels in 1880 to 66,982,862 barrels in 1904; and that the value of all products combined increased from $43,705,218 in 1880 to $175,005,320 in 1904.

It will be seen, says the report, that at all the censuses illuminating oil has been much the most important product; for the year 1904 illuminating oils amounted to 48.2 per cent of the quantity of crudes consumed, and that their value was 52.2 per cent of the entire value of all products. The relative value, however, has decreased from 75.2 per cent of the quantity of crude consumed in 1880, and from 84.3 per cent of the total value of the products in 1880. This great change, the report says, is partly due to the increased refining of crudes of a lower grade. In 1880 Pennsylvania furnished all the crude handled by the refineries, while the estimates of the Bureau of Corporations indicate that in 1904 the proportion of illuminating oil derived from Pennsylvania crude was only about 67 per cent, this change being due to the development of by-products.

Consumption of Crude Oil and Production of Illuminating Oil by Three Groups of Refineries in 1904.

Refineries.	No. of Plants.	Crude Oil Consumed. Bbls. 42 Gals.	Illuminating Oil Produced. Bbls. 50 Gals.	Approximate Proportions Illuminating.
Owned or controlled by Standard Oil Co.	18	50,561,220	a 21,341,179	78.7%
*Affiliated with Standard Oil Co.	5	5,136,780	a 2,143,110	7.8%
Total	23	55,698,000	a 23,484,289	86.5%
Owned and controlled by Independent Refiners	75	10,470,600	b 3,650,805	13.5%
Totals	98	66,168,600	c 27,135,094	100.0%

(a) These figures from table in Commissioner's report.

(b) These figures not assumed to be accurate, but result of subtracting amount credited to Standard and affiliated companies from the total production as reported by United States census.

(c) Stated by the Commissioner's report to be the figures given by the United States census as the total production of illuminating oil for 1904.

(*) The affiliated companies are stated by the report as follows:
Tidewater Oil Co., Bayonne, N. J.
Florence Oil and Refining Co., Florence, Colo.
United Oil Co., Florence, Colo.
Security Oil Co., Chaison, Texas.
Corsicana Refining Co., Corsicana, Texas.

The above table will indicate approximately the proportionate control of the illuminating oil output by the Standard and its affiliated companies—and the two groups combined—and the Independents, respectively.

Thus the report shows that the Standard Oil Co. and its affiliated companies (23 plants) consumed 84.2 per cent of the crude oil, and produced 86.5 per cent of the illuminating oil, while the Independent Refiners (75 plants) consumed only 15.8 per cent of the crude, and produced only 13.5 per cent of the illuminating oil in the year 1904.

The report further shows that "not only does the Standard Oil Co. thus effectively control nearly seven-eighths of the output of illuminating oil in the United States, but the competition of many of the smaller concerns which produce the remaining eighth of the output is materially restricted by reason of the fact that they are able to obtain crude oil only from the Standard" . . . and that "no less than 15 refineries handling Appalachian crude are parties to a contract with the Standard's interests, by which their aggregate of purchases of crude from the Standard are strictly limited to 143,000 bbls. per month, and by which until recently they were substantially prohibited from buying any elsewhere, and were also required to sell all their export refined oil to the Standard. . . . The illuminating oil produced by concerns wholly independent of the Standard and not buying crude from it was, in 1904, only about 2,500,000 bbls., or less than 10 per cent of the national production."

In respect to the five companies which the Commissioner presents as being affiliated with the Standard the following excerpt from the report is here quoted in explanation: "The Standard has close relations with the Tide Water Oil Co., the largest outside concern. In 1883 the two concerns made an agreement for fifteen years, which provided for a division of the business of refining between the Standard and the Tide Water in the proportion of 88.5 per cent and 11.5 per cent, respectively. The Standard has also arrangements for the exclusive purchase of the refined products of the Florence, United and Corsican companies. . . . and probably also a similar agreement with the Security Oil Co., which certainly sells substantially all, if not all, of its products to the Standard. The Standard moreover indirectly controls the Security and the Corsicana Refining Co. The output of these five affiliated concerns in 1904 was about 2,143,000 barrels of illuminating oil."

The report states that the Standard, in addition to its refineries proper, has various works for the manufacture and elaboration of by-products, some directly connected, others entirely separated from the refineries. The most important of the separated works are the Galena Signal Oil Co., Franklin, Pa., and the Vacuum Oil Co., Rochester, N. Y., the former producing railroad lubricants, and the latter chiefly high-grade lubricating oils. The subject of railroad oils is taken up in this review under a seperate heading. The report states that the Standard also controls the American Wick Co., the Interstate Cooperage Co. and various other concerns that manufacture accessories of the oil industry.

While it is not the present purpose of this review to take up the subject of export oil, nor of the Standard's relations to the refining industry in foreign countries, the following items from the Commissioner's report will be of interest in this connection.

Approximately 55 per cent of the output of illuminating oil in the United States is exported. The total export of illuminating oil from the United States in 1904 was 15,227,163 barrels; the total exports from refineries directly controlled by the Standard, as com-

puted by the Bureau of Corporations from information obtained from the Standard, in 1904, was 11,730,000 barrels, or 77.1 per cent of the aggregate exports. The report says that no accurate information is available as to the exportation by the five concerns affiliated with the Standard, but that it may be assumed that the Texas and Colorado plants export none, except that the output of the plant at Chaison, which is all purchased by the Standard, may furnish some for export. The report says that the Tide Water Oil Co., at Bayonne, N. J., reports that they sell some export oil to the Standard; and that it is probable that the Standard handles all of this company's export oil.

In addition to the export oil produced by the Standard concerns, the Standard exported considerable quantities purchased from Independent refineries under the terms of the National Petroleum Association contract, which, until June, 1906, required the members of that association to turn over all their export oil to the Standard, from whom they purchased their crude oil. So the Standard reports to the Bureau its total exports of illuminating oil for the year 1904 at 13,240,113 barrels, which is about 87 per cent of the total exports of the United States.

Regarding the Standard's control in foreign countries the report says:

"The Standard Oil Co. also controls several refineries in foreign countries. Thus, through the Waters-Pierce Oil Co., it has three refineries in Mexico, and through other concerns it has one refinery in Cuba, one in Germany, one in Austria-Hungary, one in Roumania, one in Japan, one or more in Canada, and is interested in two in France."

In the three reports already published by the Bureau of Corporations there is considerable other information regarding the Standard's position in foreign countries; but as the Bureau will issue a separate report on the subject of the foreign oil trade, it is not pertinent to go further into the matter in this review, in advance of the issuance of that report.

There are two other reports to be issued by the Bureau: one dealing in particular with the oil industry in California; the other relating to the industry in the Kansas, or Mid-Continent field. So that it is advisable to defer extensive review of these two matters, even though the report of the Commissioner has already presented a deal of interesting matter respecting these two fields.

IV.

LUBRICATING OILS.

Prices—Values—Railroad Lubrication.

The report of the Commissioner of Corporations deals with all classes of lubricating oils, and particularly with lubrication of railroad equipment. In the preceding articles of review in this series the subject of prices (of crude oil and illuminating oil) has not been considered—that subject being reserved for a separate article; but in the present article the subject of prices is essential to a comprehensive review of the lubricating oil industry, in any of its features.

The report states that the lubricating oil trade may be divided into two branches, namely, the lubrication of the rolling stock of railways and the lubrication of the machinery of mills, etc., and that the lubricating oil business differs from that in illuminating oil and gasoline in the fact that a large proportion of the consumers are very large concerns—mills, railroads, etc.—who naturally buy from the manufacturer or from jobbers, and not from retail dealers . . . the prices to retail dealers of lubricating oils are comparatively unimportant, and in many cases are a matter of special bargaining.

The most available criterion for the movement of lubricating oil prices obtained by the Bureau of Corporations is the Thompson & Bedford (Standard Oil) department price lists for Boston and other New England markets, the regular quotations covering 47 different brands, as shown in the following table:

Price List of Lubricating Oils in 1905.

Brands.	Cents per Gal.
Cylinder oils (light filtered:	
Extra Filtered	18¾
Cosmos	15¾
XXX B. & T. Valve	24¾
Cold Test	22¾
FFF	28¾
Cylinder oils (dark filtered):	
Dark XXX Valve	22¾
Economy	17¾
Continental	14¾
Cylinder oils (unfiltered):	
A	12¾
N	17¾
Locomotive	20¾
Green	14¾
Ajax	10¼
Paraffin oils:	
903/907	13¼
903	12¼
885	10
875	9¼
865	9¼
H. V.	16¼
Bayonne Engine	23¼
Ice Machine Oil	13¾
Red oils:	
No. 1	13¼
No. 2	12¼
Eagle	11½
Solar	14¼
Spindle oils:	
Red	11¾
No. 1 Eagle	13¾
No. 2 Eagle	12¾
No. 3 Eagle	11¾
No. 4 Eagle	10¾
Atlantic No. 1 filtered	15¼
Manchester	19¼
Atlantic Light Spindle No. 3	11¾
Wool and Neutral oils:	
XX Wool Stock	13¼
2 Wool Stock	12¼
Eclipse Wool Stock	15¾
Eagle Neutral	12¼
Venango Neutral	16¼
White Rose	17¾
Extra White Rose	22¾
Eclipse White	27¾
Black oils:	
15 Cold Test	11¾
25/30	11¼
Summer	10¾
Sundries:	
300	10¾
Smith's Ferry	10¼
West Virginia	19¼

NOTE.—There are four main classes of petroleum lubricating oils: Cylinder, Paraffin, Neutral, Black. Paraffin group includes also the Red oils, Neutral group includes Spindle oils, Sundries (above mentioned) do not fall within any of these four main classes; the "300 oil" is really an illuminating oil of extraordinary high fire test used by railroads, vessels, mines, etc.; the two other Sundry oils represent natural crude lubricants, in some cases artificially manufactured.

The list prices for the Boston and New England markets are regularly subject to a discount of 5 per cent, and exceptional additional discounts are also sometimes made in this section to meet competition. The list prices for New York and Philadelphia markets are subject to a discount of 5 per cent, generally in case the purchaser agrees to buy his lubricating oil exclusively of the Standard.

Thompson & Bedford (the Standard) do not guarantee to deliver the exact tests accompanying the price lists, but state that the tests represent their average delivery. The report says that during the period covered by the prices used in the report a few slight changes were made in the specifications, but not important enough to alter the essential character of brand or value. The character of such changes of a few brands is shown in the following tabulated statement:

Changes in Specifications of Lubricating Oils.

Brands.	Gravity. Mar. 1900	Gravity. July 1901	Flash. Mar. 1900	Flash. July 1901	Cold Test. Mar. 1900	Cold Test. July 1901	Viscosity. Mar. 1900	Viscosity. July 1901
Cylinder oils (light filtered):								
Extra Filtered	27.6	27.6	536	525	83	80	127	127
Cosmos	28.0	28.4	500	490	84	80	102	101
Cold Test	27.9	27.5	484	505	51	50	107	115
Paraffin oils:								
903/907	25.2	25.2	400	395	32	32	220	220
H. V.	24.5	24.4	410	405	33	34	277	282
Bayorne Engine	23.3	23.3	427	420	33	34	408	414

Cylinder oils, the report says, are almost exclusively made from Pennsylvania crudes, and are the heaviest important product of refining by what is known as the cylinder stock process, and are made from the residum left after the lighter products are distilled off. The paraffin oils are obtained by a different method of distillation; this method, at least in the case of Pennsylvania crude, is known as the tar process; the paraffin distillate from which the paraffin oils are made being the last product to be distilled, leaving the heavy tar and coke in the stills. The paraffin oils made from the Pennsylvania crude are designated "paraffin oils"; those made from Lima crude are ordinarily called "red oils," and differ somewhat in physical characteristics from the Pennsylvania product, but their uses are practically similar; both are used, in general, for lubricating comparatively heavy machinery where there is no great heat; many of them are ordinarily designated "engine oils." Neutral oils are practically all obtained from Pennsylvania crude, and are manufactured in connection with the cylinder stock process, the heavier oils in this group are for miscellaneous machinery; the "wool stock" of this group is used in cleaning wool. The black oils are made from either Pennsylvania or Lima crude by a process similar to the cylinder stock process; they constitute a residium left in the stills, but as the process of distillation is not carried so far when cylinder stock is made, a larger proportion of black oils than of cylinder stock is obtained; they are used for the simpler forms of machinery, car journals, etc.

The cylinder oils are the most valuable class of lubricating oils; the paraffins show approximately the same prices as the red oils; the neutrals are in general more valuable than the paraffins; the black oils are the cheapest grades except one or two low grades of paraffin oils.

The report says that, in view of the fact that the different oils falling within any one of the main groups are made by similar processes, it may be expected that there is a parallelism of prices movements within each group; therefore the quantity of certain brands sold may be much greater than of other brands of the same group, and still not affect the validity of the price movements obtained by averaging the quotations for all the brands of a given group. The annual average prices for the different groups and sub-groups from the Thompson & Bedford department, Boston and Providence, are shown in the following table, in cents per gallon:

Comparative Prices of Different Classes of Lubricating Oil.

(In Cents Per Gallon.)

Class of Oil.	1898	1899	1900	1901	1902	1903	1904	1905
Cylinder oils	15.7	16.8	17.6	17.3	17.3	20.8	20.1	18.6
Light filtered	19.0	20.0	20.5	20.2	20.3	24.5	23.7	22.2
Dark filtered	16.3	17.3	17.8	17.5	17.5	20.3	19.8	18.4
Unfiltered	12.0	13.3	14.5	14.2	14.3	17.4	16.7	15.3
Paraffin oils	12.1	13.4	17.3	14.2	14.2	16.1	15.0	13.4
Red oils	9.1	10.3	15.5	13.0	13.2	15.4	14.6	13.3
Spindle oils	11.4	12.3	12.8	12.6	12.6	15.4	15.8	13.4
Wool & Neut. oils	15.1	16.0	16.6	16.3	16.4	19.1	18.6	17.3
Black oils	7.6	9.3	11.1	10.8	10.9	13.6	12.8	11.3

The red oils and the black oils, which show so marked an advance, are very important groups, and it is probable, says the report, that the simple average of all the prices somewhat understates the actual advance from 1898 to 1905.

The prices in Boston and Providence show closely similar movements to those in New York and Philadelphia.

The more limited information available in regard to price movements in other parts of the country and by other methods of marketing indicates that the prices quoted by the Thompson & Bedford department are representative of the true price movement, says the report, and that it is not probable that the average of the Thompson & Bedford prices for any given time materially exceeds the true average proceeds of all sales of petroleum lubricating oil in the United States.

The report, with minuteness of detail, presents many tables and diagrams descriptive of price movements, which it is, of course, impossible to reproduce here.

A special chapter of the report is devoted to the prices paid by railroads for lubricating oils, in which the Commissioner states that the "prices usually received by the Standard Oil Co. for lubricating oils sold to railroads were pronounced exorbitant by all Independent refiners and jobbers interviewed by agents of the Bureau."

The report says that the Galena-Signal Oil Co., the greater part of whose stock is owned by the Standard Oil Co. of New Jersey, furnishes practically all the railroads of the country with their entire supply of lubricants; a number of railroads are supplied through the Waters-Pierce Oil Co. (another Standard concern) with oils manufactured by the Galena-Signal Oil Co. The Bureau of Corporations obtained detailed statements on the purchase and use of lubricants for rolling stock from 94 railroads, all under contract with the Galena, which represent 91.5 per cent of the total trade in lubricants used on railroad rolling stock in the United States.

The contracts of the Galena-Signal Oil for furnishing lubricants and signal oil (of which the report contains a copy) provide an invoice price list, from which a reduction is made on a mileage basis. The invoice price list is here given:

Class of Oil.	In cents per gal. In tank cars.	In cents per gal. In wood bbls.
Perfection valve oil for locomotive valves and cylinders	48	50
Galena engine oil, for locomotive machinery	28	30
Galena coach oil, for passenger cars	33	35
Galena car oil, for freight cars	18	20
Perfection Signa oil	34	36

The following table shows the results of the contracts with the 94 railroads above mentioned, describing (1) the per centum of the invoice cost paid under the mileage guaranties; (2) invoice cost of lubricants, in dollars; (3) amount, in dollars, paid by the railroad companies under mileage guaranties; (4) refund from the invoice cost under the mileage guaranties. These data cover in each case a single year, either the calendar year 1904 or 1905, or the fiscal year ending in 1905 or 1906.

Cost of Lubricants for Ninety-four Railroads.

Groups of Roads.	Per Cent of Invoice.	Invoice Cost Gross.	Amount Paid Net.	Refund from Invoice.
Ninety-four roads	83.4	$4,875,958	$4,068,557	$807,401
Pennsylvania System	49.0	787,122	385,933	401,189
Group A (8 roads)	57.6	205,355	118,399	86,956
Group B (12 roads)	74.4	831,844	618,940	212,904
Group C (15 roads)	85.5	400,506	342,259	58,247
Group D (17 roads)	95.8	1,138,209	1,090,104	48,105
Group E (41 roads)	100.0	1,512,922	1,512,922	.....

After commenting on the above tabulated statement the report goes on to discuss in detail the data relating to the Pennsylvania system, as having a very important bearing on the determination of competitive prices for the oils in question, and showing that for the lines east of Pittsburg the payment was less than 55 per cent of the invoice prices, and for the lines west of Pittsburg it was only 39 per cent, making an average of 49 per cent on the entire system; or a refund of 51 per cent in the prices of each class of oils per gallon, as shown by the following (in cents per gallon):

	Valve oil.	Engine oil.	Coach oil.	Car oil.
Invoice price	48.0	28.0	33.0	18.0
Paid by Pennsylvania System	23.5	13.7	16.2	8.8

The Oil Investors Journal of Beaumont says there was a decrease in the number of wells completed and an increase in new production in the Gulf Coast region in March, completions numbering 82, of which 61 were producers with 25,375 barrels initial output, an average of 416 barrels to the well, 17 were dry and 4 gas. The February record was 95 completions, 69 being producers with 16,200 barrels per well, 25 being dry and 1 gas. On March 31st there were 109 wells drilling in the various districts and 30 rigs as compared with 110 drilling and 38 rigs on February 29th.

California Derrick

The Oil Authority of the Pacific Coast

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A BUREAU OF MINES.

There is a present strong probability that Congress will ultimately, and possibly within the present session, recognize the necessity of a more extensive investigation of the mining industry. The House Committee on Mines and Mining, through Chairman Englebright, has recommended for passage a bill drawn by a sub-committee for the establishment of a bureau of mines in the Department of the Interior. Whether the bill provides for work wholly independent of the Geological Survey, or supplemental thereto, it is not possible to say from the brief dispatches regarding its recommendation. In general terms, the duty of the new bureau is to foster, promote and develop the mining industries of the United States: to make diligent investigation of the methods of mining, the safety of the miners, the possible improvement of conditions under which mining operations are carried on; the treatment of ores, the use of explosives and electricity, the prevention of accidents, the value of mineral products, and the market for the same. And to publish reports of investigations, as the Secretary of the Interior may direct. This bureau might have just as well been established ten years or more ago had the mining interests been satisfied with such an establishment and been supported in their undertaking by the Secretary of the Interior. It did not require much time for Secretary Garfield and Director Smith of the Geological Survey to act in behalf of the mining interests. In a future article the California Derrick will discuss the efforts and attitude of the Geological Survey in the matter. For the present the least that may be said is that the Secretary and the Director are entitled to grateful consideraion of the mining interests of the country.

At the time the United States Bureau of Corporations was investigating the transportation rates on petroleum on the Pacific Coast it was generally supposed that the inquiry could not go into intrastate traffic, and that the allegation of the Independent shippers in California that they were being discriminated against would be overlooked by the Government investigators, and unnoticed in the reports of the Commissioner of Corporations. The facts did not bear out the supposition, for while the Government could not prosecute violations of the State law (provided there were a State law) it could legally, and did thoroughly, inquire into and make public the alleged discriminations in favor of the corporations in intrastate traffic. While it is true that the interstate shipments from California points were handled by the railroads jointly in such manner as to preclude the probability of Governmental judicial inquiry resulting disastrously to the violators of the interstate law (if there were any such violations) it was disclosed by the Commissioner's report that there were just such discriminations in intrastate rates as are now being exploited by the California State Board of Railroad Commissioners. The further fact that the Government disclosures caused the cessation of these discriminations, so that the Independent shipper is now on equal footing with the corporations, shows the utter uselessness of the present State investigation.

The quarrel between the State Mineralogist and the Monterey Coal Co. as to the merits of the coal company's property, and the charges of Mr. Aubury, have not been investigated by the California Derrick. Until such investigation can be properly and thoroughly made there is not much to be said in the premises, except this: It is a common practice in this State for promoters of mining companies to present in their prospectuses the facts relating to neighboring properties in such manner as to lead the innocent purchaser of stock to conclude that the exploited company is no less favorably situated. It is sometimes true that the unproven property turns out in the end to be a better proposition than its neighbor: but this chance is a gamble; and the promoter is legally liable for selling stock by deception, if he pretends that an unproven property is a proven one. The California Derrick lays down the same rule of conduct for itself that it expects other companies and corporations will follow if they would merit the approval of this paper: so for the present a further discussion of this controversy is withheld.

Mr. J. C. Christensen, whose special article on "Dye-making from California Crude Oil" appears in the present issue of the Derrick, is a graduate of the University of California, and has made a special study of oils, not only in an experimental and theoretical effort, but in practical work in three of the leading refineries of California: the Standard refinery at Point Richmond, the Capital Refining Co.'s plant at Stockyards, Alameda County, and the California Petroleum Refineries, Ltd., at Oilport in San Luis Obispo County. In the Capital refinery Mr. Christensen worked in every department of the plant and with the two other refineries he was employed as chemist. He is now located at Fresno, engaged in the profession of consulting or analytical chemist in any branch, but making a specialty of oil. Mr. Christensen will be a regular contributor to the scientific and technical departments of the Derrick.

Two errors in the March issue of the Derrick, page 10, column 2, are here corrected: Item 1, under heading "The Independent Contract," paragraph 2, regarding California output of 1,000,000 barrels, should read: "for the year 1896" (not 1906). Item 2, "Associated Pipeline," etc., lines 5, 6, 7, should read, "The total amount of pipe laid to date is 273 miles: the entire length of the line, exclusive of laterals, to be 282 miles" (not inches).

CALIFORNIA OIL ASPHALT

Courtesy California Asphaltum Sales Agency.

The history of the asphalt paving industry has been crowded with dramatic incidents and wonderful developments.

Fragments of asphaltic rock falling upon a road in a Swiss valley led to the discovery of its value for pavements; the paving of a Paris boulevard and of Threadneedle street, England; the experiments of De Smedt with Trinidad asphalt, his invention, patents and paving of Pennsylvania avenue, Washington, D. C.; the acquisition of Trinidad asphalt by Amzi L. Barber and his successful plea to the Privy Council of England not to allow Trinidad asphalt to be opened to free trade; and the contests legal, diplomatic and with armed men over the Bermudez deposit are but a small part of the unwritten story of a great industry.

Twenty-four years after De Smedt laid his first strip of pavement in Newark, N. J., an immense business had been established, largely upon a theory.

This theory was that Trinidad Lake, the Bermudez deposit, and the almost exhausted Alcatraz deposit of California, constituted the only available source of supply of asphalt, which the most important cities in America must have in large quantities.

Upon this theory a great organization was built, capitalization fixed, bonds and stock certificates issued and locked in safes and safe deposit vaults.

It developed between 1900 and 1904 that instead of our country being dependent upon South America and other foreign nations for its paving asphalt, that a single State (California) could supply not only sufficient asphalt for the needs of cities of its own countries, but also an amount greatly in excess of the paving requirements of the civilized world.

More than ten years ago streets in New York and other Eastern cities were paved with California asphalt, refined from the California crude oils, but as the amount used was small, it attracted but little attention.

The production of crude asphaltic petroleum in California was but 300,000 barrels in 1895 and 500,000 barrels in 1898.

Since this period the production increased by leaps and bounds to 34,427,423 barrels in 1906.

Had this entire production of 1906 been refined it would have yielded 8,356,750 barrels, or about 2,000,000 tons, of pure asphalt.

As the present entire consumption of asphalt in the United States is about 300,000 tons annually, it can easily be seen that California could take care of its sister States' paving requirements should some unforeseen international complications prevent the importation of paving asphalt, and besides give them a better material.

Present indications show the gradual displacement of South American and other so-called natural deposits by California oil asphalt, and should the same ratio continue the importation of foreign asphalts for street paving will entirely cease in five years.

Of course, the reliability of California oil asphalt has been questioned, as witness the statement made a few days ago by James K. Bush of East Orange, N. J., who said, through the columns of the Los Angeles Times, that crude oil asphalt was a complete failure.

It now seems that Mr. Bush's statement is not in accord with the opinion of the leading asphalt experts of our country, and in contraverting his contention that crude oil asphalt is a failure, we have the statement of Chief Engineer Lewis of the Board of Estimate and Apportionment (the governing body of New York City), who in a communication addressed to Mayor McLellan said:

"That he had examined the streets of New York paved with California oil asphalt and found them in as good a condition as those paved with other material, several of which had been laid many years."

He also stated that:

"It must be admitted that the earlier pavements, in which was used a hard natural asphalt from California, were inferior to those subsequently laid."

In explaining this, it seems that during the years 1895 and 1896 a hard, impure, natural asphalt, brought from California, was used by the contractors in the streets paved during these years; hence Engineer Lewis' statement that the streets paved with this material were inferior to those subsequently paved by the same contractors, these contractors having since 1897 used California oil asphalt exclusively.

City Engineer George W. Tillson of Brooklyn, N. Y., a name known by all civil engineers, and ranking at the head of his profession, says that he considers the streets laid by a contractor using California oil asphalt exclusively among the best of that city.

Engineer Olney of New York stated: "I wish there were a few more contractors of this city using California asphalt."

While there are very few cities owning their own municipal asphalt plants, these plants are slowly, but surely, being installed at different cities, and California asphalt refined from the crude oils of this State has been or is in the majority of these cities being used at these plants.

These include New Orleans, Allegheny, Bluffton (Ind.), Detroit, Hamilton (Ont.), Winnipeg, Manitoba, and Engineer Tillson of Brooklyn, N. Y., especially provided for the use of California asphalt in the new city plant recently erected in that city by having the specifications of that city call for an asphalt refined from California crude oil.

California crude oil asphalt has been and is being used to produce successful pavements in New York, Newark, Jersey City, Trenton, Cleveland, Cincinnati, Kansas City, Buffalo, Chicago, Detroit, Toronto, New Orleans, Rochester, Denver, Omaha, Lincoln, St. Louis, and is now recognized as one of the best paving cements of the world.

This material fits the description of a perfect paving cement as formulated by De Smedt a quarter of a century ago. It is purer chemically and less effected by water and lyes than any other material. Owing to its purity, a ton of it will pave more yards than an equal weight of other material. It requires less care in sand grading and less skill to produce durable and long-time pavements, making it less expensive for contractors and highway departments to maintain.

Reported by

Special Field Representatives

of the

California Derrick

COALINGA.

There are 38 strings of tools running in proven ground on the east side field; it is estimated that these wells will bring in about 4,400 barrels of new production daily this year. There are 33 strings of tools running in proven territory on the west side field; this is estimated at about 10,170 barrels of new production daily this year. A total daily new production of about 14,570 barrels. The present production of these fields now averages 25,000 barrels daily. Deduct 20 per cent for the year for wells falling off, etc., which leaves the average daily production at 20,000 barrels; to this add the estimated new production, 14,570 barrels, and we will have an estimated daily production for 1908 of 34,570 barrels.

J. P. Noble, division superintendent Pacific Telephone and Telegraph Company, at Fresno, paid Coalinga and the field a visit last week. The situation at present and the future outlook for this field has been a matter of earnest study for the officers of the telephone company, as well as a study for the heads of the Southern Pacific. The telephone company, after taking over the business here last year, spent about $50,000 in rebuilding a great part of the system, putting in cable and other improvements, which they at that time believed would be sufficient for this field for at least two years, while they were studying the actual wants of the field. They had not completed the task before the growth of the business had made their work look small. The increase of the business has continued to such an extent that they must again extend the service, and improve the same. It is understood the plans will provide for the requirements of a population of 5000 in town and field. The business of the town and field is urgent. There is at all times a large amount of money invested and it requires quick action. With the expansion of the field with the oil industry extending beyond the north of the east side, and now 23 miles south of the west side field, it is a conservative estimate that Coalinga will be a city of 5000 within three years. The Southern Pacific is today unable to handle the freight coming into the field. There are not enough sidings to handle the freight cars. Only last week more than 30 cars were reported held up at Lemore, as they could not handle them here until some of the empties were hauled out. Week before last there were nearly 100 freight cars held up at the same place for the same reason. The Southern Pacific Company has sent representatives here to study the situation, and as they have reported favorably, it is believed we are to have relief soon.

It is reported that the Southern Pacific has notified all parties holding leases under that company that the oil deliveries must not go below 2 per cent B. S. This restriction will cripple some of the parties now shipping.

The Ward Oil Company, section 12-20-14, has well No. 3 on the pump. This company was one of the first to receive the new Dowe pumps, 10x4x10, from the agency. They have installed two 70-horsepower boilers; have rigged up on well No. 4. The company has in storage about 14,000 barrels of oil; last week the company delivered to the agency two tanks of oil.

The New Era Oil Company, section 12-20-14, has completed well No. 1 to the first oil sand; is rigging up on well No. 3; is building derrick and rig for water well.

The Coalinga Independent Oil Producers' Agency in April elected the following officers: President, S. W. Morshead; first vice-president, M. V. McQuigg; second vice-president, T. A. O'Donnell; secretary, R. W. Dallas; treasurer, H. H. Walsh. The next important move of the independent oil men is to combine the Coalinga and Kern River agencies. It is said this will be done in a short time.

The Premier Oil Company, section 24-20-14, has completed well No. 2, which is making about 200 barrels daily; has material on the ground for two more derricks and rigs.

The Claremont Oil Company, section 24-20-14, has completed well No. 1; is drilling on well No. 2 and No. 3; has material on the ground for derrick and rig for well No. 4.

J. M. Wright, section 2-18-15, is rigging up on well No. 1. He has laid a water line to Wilcox for water from a developed spring, which is yielding now about 500 barrels daily.

The Bunting & Brix Oil Company, section 12-20-14, has completed well No. 3; the company has about 1,000 barrels in the sump; has set up a new gauge tank.

The Caledonian Oil Company, section 26-20-14, after long and persistent efforts, has got well No. 3 in production again at the rate of 200 barrels daily.

The Associated Oil Company, section 36-20-14, has well No. 23 on the pump, making about 600 barrels daily.

The Home Oil Company, section 14-20-14, has received a new Dowe line pump from the agency, 10-4-10, and is now delivering oil.

The Lucile Oil Company, section 6-21-15, has contracted with the Associated Oil Company to deliver 300,000 barrels of oil, the price is reported to be about 55 cents.

The Merango Oil Company, section 24-20-14, is drilling on well No. 1, the report is current that the company will put in three more rigs on the east line.

The Inca Oil Company, section 24-20-14, is running four strings of tools, has 16 producing wells, 6 new rigs ready for the driller.

The S. W. & B. Oil Company, section 6-20-15, is repairing derrick and rig on well No. 2 to clean out. Well No. 4 is producing about 250 barrels.

Mr. Harris, late superintendent of the S. W. & B. Oil Company, has returned to Bakersfield to re-enter the service of L. P. St. Clair.

Judge Risley of Fresno, a director in the Confidence Oil Company, paid the field a visit last week.

The Union Oil Company, section 13-20-14, has built three rigs and will soon spud in.

The K. T. & O. Company, section 13-20-14, is drilling on well No. 1, on their south line; has four more rigs on the south line ready for the driller.

The Wabash Oil Company, section 24-20-14, is hauling material for rig No. 13; will be located east of well No. 7 on the north line.

The Esperanza Oil & Gas Company, section 6-20-15, is 800 feet deep with 10-inch casing in well No. 9.

The Norse Oil Company, section 24-20-14, is drilling on well No. 3, and rigging up on well No. 4.

The California Monarch Oil Company, section 26-19-15, is pulling out the 4½-inch casing and will clean out well No. 1.

The Pennsylvania Mining, Development & Oil Company's lease of the California & New York Oil Company's section 12-20-14 is cleaning out well No. 2.

The Ozark Oil Company, section 26-20-14, is 640 feet deep with 10-inch casing.

The Lorine Oil Company, section 12-19-15, landed the 8-inch casing last week at 1900 feet.

The New San Francisco Crude, section 6-20-15, is rigging up on well No. 6.

The Fresno-San Francisco Oil Company, section 1-20-14, is building derrick and rig for well No. 5.

KERN COUNTY.

Kern River.

The present high price of oil has stimulated drilling in this field to a greater extent than any time since the boom days of seven and six years ago. Every company in the field that has any territory as yet undrilled and promises even fair wells has one or more strings of tools working on new wells.

Very few of the new wells brought in show very large production, with the exception of two new wells drilled by the Bald Eagle Oil Co. in the northeast quarter of section 30. This territory has been thought to be very light, but the new wells drilling by this company have been producing for the last three weeks from 100 to 125 barrels daily each. The Bald Eagle has two strings running on this quarter section and expects to have six or more wells done within the next few weeks.

The Mecca Oil Co. is drilling several new wells on the lower south line of section 19. The new work in the Kern River field seems to be in the northern direction in territory that was abandoned six or seven years ago on account of the wells being too light producers at the price oil has been selling for during the last six years.

The extreme northeast quarter of section 28 is now receiving attention, a new rig being put down on this quarter that, in company with the northeastern and east part of the field, was abandoned years ago.

The idea seems to gain in favor with the men who have been in the field for many years that with improved methods of drilling there is still a probability that oil in greater quantities may be struck in the northern and northeastern parts of the field, but nothing that has been brought in so far has proved this theory to be true.

The Section 5 Oil Co., on the extreme south part of the field, has a rig up and tools running.

California Kern Oil Co. has several derricks up and one string of tools running; one well nearing completion. It is the intention of this company to bring five or six wells into producing this summer.

The Junction Oil Co. has one string running on new work and has just installed a new battery of boilers.

The Del Rey Oil Co. is drilling one new well, the first new work to be done on this property for several years past.

The item of most interest is the bringing in of a good well on the famous section 6 in the Kern Field. This is the section that in the early boom days was thought to be the cream of the field. Fabulous prices were offered and refused for land in this section until the trend of the oil belt was proved to be northwest of the section, since which time no oil man would have hardly put down a well if the land had been given to him. The well just brought in is on the extreme northeast part and really proves nothing definite on a big scale for this famous section.

California Derrick, and Reflection from Surface of Pool of Oil Produced from this Well.

Despite the extensive drilling, the production of the field has not increased any. The daily production is now 27,000 barrels, the entire quantity of which is being used and hardly a barrel of oil going into storage. There are 1,300 wells producing in the field, a great number of which are water wells or wells producing mostly water with a very little oil.

Thirty strings of tools are running in the field with 35 new derricks up, the work to be commenced on as soon as the crews have finished work on wells drilling now. Twenty wells were completed during the past month.

During the past three months a number of companies have been signed up, and the contracts of the following were ratified by the Independent Oil Producers' Agency: Jewett Oil Co., Olig Crude, C. J. Oil Co., Merrill & Benedict, McKittrick and East Puente, all at McKittrick; United Crude, New Center, Acme and McCutchen Bros., at Sunset, and Fox & Garrett, Emerald Junction, and Akron, at Kern River.

The Independent Oil Producers' Agency at Bakersfield elected officers in April for the coming year; ratified contracts for the handling of the product of a number of companies not previously connected with the Agency; indorsed the Smith Oil Lands Bill, introduced by Congressman Smith of Bakersfield in the present session of Congress, and prepared for the extension of the life of the Agency for five years. The officers elected are: President, L. P. St. Clair; vice-presidents, F. N. Scofield, D. W. Carmichael and Timothy Spellacy; secretary, W. B. Robb; treasurer, A. H. Liscomb. The directors are F. N. Scofield, L. P. St. Clair, A. H. Liscomb, E. E. Jones, C. C. Bowles, Leonard Merrill, W. B. Robb, Thomas Scott, Bakersfield; J. F. Kerr, T. Early, H. S. Bridge, T. Spellacy, William Meade, Los Angeles; J. C. Jones, William Ellery, San Francisco, and D. W. Carmichael, Sacramento.

Sunset-Midway.

It is in these two fields the extensive new development work of Kern County is being rushed to the full extent. In the Sunset field proper there is very little new work, the Sunset field being known as Maricopa. Around the town of Maricopa a great deal of work is going on, the Fulton Oil Co. having one crew at work on a new well and derrick up for two more.

New Center Oil Co. has one drilling well and derrick for one more.

Walter Snook and the Gate City Oil have each a rig up for a new well.

The Monte Cristo has one new well completed and derricks up for three more wells. The Monte Cristo is doing extensive work on sections 15 and 32, further up in the Midway field proper.

The Sunset Monarch Oil Co. has three or four strings at work on different properties.

The Sunset Road Oil Co. has five or six drilling crews at work on new wells.

On the flat directly east of Maricopa the Yellowstone Oil Co. has a well down about 800 feet. It is the expectation of this company to test the territory to the east of the proven field with a deep well. In case a light oil is found in this well it will give the Sunset field a great boom and open up a practically new oil field for the west side.

On section 30 the Big Four Oil Co. has commenced drilling on a well that will extend the field at least a half mile in case oil in good quantities is found.

The Pierpont Oil Co., operating on section 25, has the rig up for its first well.

The Talare Oil Co., on section 24, has one of the biggest wells of light oil that has ever been discovered in the Midway field. If other wells drilling near this property come in with 200 or 300-barrel wells, as this one is, the Midway field will be proven to equal

the great Salt Lake field, near Los Angeles, and in a fair way to equal in extent and production the Coalinga field.

In Sunset and Midway there are 30 strings of tools running; 6 wells completed during last month, and close to 150,000 barrels shipped from Sunset. The amount delivered to the Standard pipeline is between 40,000 and 60,000 barrels. With the completion of the railroad to section 8 in the Midway the operators will have better facilities for new development work in the way of transportation.

McKittrick has 15 new wells drilling; 5 completed last month; a daily production of 4,000 barrels, and shipments of a like amount. The trend of development in this field is to the northwest in the direction of the Temblor district, several new wells having been brought in between McKittrick proper and this district, which is as yet without a pipeline or railroad.

SANTA MARIA*

The effects of shutting off the water by the cementing process are already noticeable. With the cementing process the water which came mostly from on top has ceased to mix in with the oil and the pressure being removed from the oil the flow has increased. There is now a prospect that the water problem will be entirely solved in the very near future.

The total output of the field is showing a slow increase from month to month. It is estimated that the production will soon reach a million barrels a month in the field between Port Harford, Gaviota and the small local distributions.

In spite of low prices for oil stocks, lower than for a long time, the producing companies are forging ahead.

The Dome Oil Co. has been incorporated with the Pinal Oil Co., making a stronger company under one management. The original Dome Oil Co., close to the Pinal field, has been under the same manager, Mr. J. F. Goodwin, right along. Their new purchase of 160 acres of the Palmer Oil Co.'s tract comes now under the same management though operations have not yet begun. The Pinal has brought in a couple of wells of about average yield since last month. The derrick of well No. 5 has been destroyed by fire.

On the Brookshire lease the wells are being put to the northward of the old set; wells 6 and 7 will probably average up as good as the rest except their exceptionally good well known as No. 5. Brookshire's old contract for cheap oil expires about the first of June, when a far better price will be had for this half of their production, and will enable them to pay a larger monthly dividend.

The Union Oil Co. is still increasing the number of wells from the middle to the northerly parts of the Newlove ranch and westerly on the Squires and Hartwell leases. The Squires well No. 10 still produces its 3500 barrels daily. These occasional finds make up for a natural decline in the average wells.

Pennsylvania Oil Co. is now expecting well No. 3 to come in before long as good as either of the two others. The stockholders are promised a dividend as soon as this production comes in.

The Rice Ranch wells are showing a slight increase of production.

The Laguna Oil Co. wells are the only ones in the north end of the field that are making a good headway. They are in bituminized shale at a depth of about 1900 feet.

In the easterly field the Los Flores Oil Co., in charge of Mr. Cole, is going ahead nicely at about 2000 feet depth in formation similar to the rest of the proven field. The first body of oil was encountered at about 1600 feet. There is no doubt that all of the eastern field from this, its most westerly point, on to the Foxen Oil Co.'s location in the extreme east, will prove equal, if not superior, to the main fields, with the only exception that the oil will be heavier than in the westerly field. The formation lies so near a level and each well tested, as in the Palmer and the Stendel, shows very thick strata of oil sands.

The Palmer's Stendel well has at present depth, 2200 feet, proven the oil bearing qualities of that part of the territory. The second oil sands have been encountered in this well at a shallower depth than in Palmer No. 1.

Foxen Oil Co. reports good prospects in the east end of the easterly field.

The Ideal Oil Co. will resume drilling operations soon under a different management.

The Oro Light and Power Co., located between the Ideal and the Los Flores, is digging a shaft, now about 300 feet deep—an excellent way of overcoming the top wash formation.

The Associated Oil Co. has spudded in its first well on the Williams place of recent date in this field. The location is about three-quarters of a mile southeast of Palmer No. 1, where they are sure to find oil. The company has surveyed a pipeline into the field and will soon begin laying a pipeline from the Gaviota 8-inch line to the Palmer. Palmer No. 1 has been gushing intermittently while pumping and has to be capped till the oil is ready for delivery.

At the annual meeting of the Heller Petroleum Co., held at Santa Maria on April 5th, the following named directors were elected: George M. Doane, Sr., H. A. Heller, Julius Kobloth, Paul Fox and George W. Cheadle. The directors then elected the following named officers: George M. Doane, Sr., president; Paul Fox, vice-president; Frank H. Gates, secretary, and the First National Bank, treasurer.

MONTEREY COUNTY*

The Southeastern Monterey Co. oil fields, though on the same structural form as the Peach Tree, Lone Oak and Easterly King City districts, has a distinct characteristic of its own. Parkfield, a small town a little nearer to Coalinga than to Paso Robles, in the southeastern part of the county, gives the name to this district. There are three ranges of hills between the Salinas Valley and Coalinga at this point; the easterly one has the dignity of a mountain range; a small middle range of hills west of this shows a narrow granite intrusion where very extensive oil seapages are found. At the same time, near this dyke or break, extensive oil sands can be traced, shells and shale, in addition, elsewhere show the probability of an oil field. Oil of a very fine gravity (30°) has been dipped out in barrels in very shallow wells from Star rigs at 500 feet. There is a future to this country. The only question will be at what distance from the break, or dyke, good producing wells will be found. That is the question we set ourselves after looking over the field.

ANTICLINES AND SYNCLINES.

Caribou Oil Company has closed a contract with the Standard Oil Company for the delivery of its oil for two years at 65c per barrel.

W. S. Porter, general manager of the Associated Oil Co., who has been ill for some time, is now able to be at his office a part of the time.

At the meeting of the transcontinental lines held in Chicago in March, 1907, it was arranged to publish in connection with oil rates westbound the oil mixture as provided by the western classification. This change was intended for the new transcontinental tariff, but because of the delay in publishing this tariff, carriers have been requested to make immediate publication in supplement.

The Andrews Oil Co., W. E. Youle, president, operating in the northern part of the Arroyo Grande field in San Luis Obispo County, had reached a depth of 2,650 feet on April 3d, with favorable indications for oil. In fact, they have passed through some streaks of oil, and are now drilling in hard shells and blue clay. Mr. Youle is of the opinion that at a depth of 3,000 feet he will bring in a good producer. This well when at a depth of 2,400 feet was purchased, together with 312 acres of land, from the Santa Lucia Oil Co. The land is located in the Santa Lucia range; the formation is bituminized and regular.

The crude oils of California have not been handled extensively with a view to obtaining some of the more valuable products. As an illustration, there could be obtained a fairly good quality of lubricating oil from the crudes of this State, and in sufficient quantity to make the industry profitable, if the market could be secured. But the evidence of the value of the crude oils of the State is becoming more and more pronounced as experiments are being made. Mr. J. C. Christensen of Fresno is at present engaged in the attempt to prepare lubricants of better viscosity than those at present made from California crude. And he will no doubt succeed.

A dispatch from Nevada City states that Mr. D. E. Morgan, president of the Nevada County Oil Co., and Sherman F. Marsh, one of the directors, returned recently from a visit to Bakersfield well pleased with the progress of the development and the output of the company's property under the efficient management of Mr. Robb. The 11 wells in operation are now producing an aggregate of about 13,000 barrels per month. A new well was started on April 1st.

*By L. E. Blochman, Secretary Chamber of Commerce, Santa Maria.

OIL MOVEMENTS BY WATER.

The tank steamer Rosecrans arrived at Astoria April 7th with cargo of crude oil from San Francisco. The tank steamer Asuncion departed from Astoria on April 8th for California.

The steamer Mexican sailed from San Francisco for Honolulu, via Seattle and Tacoma, April 4, with 5,000 barrels of crude oil in bulk, 50 drums of distillate, 27 barrels and 52 cases of gasoline and 75 empty tanks, valued at $7,497, as cargo from this port.

The tank barkentine Fullerton was cleared for Honolulu April 7th with 15,000 barrels of crude oil in bulk, valued at $9,000.

The Br. tank steamer Ashtobula, returning March 29 in ballast from Japan, after delivering a cargo of oil for the Standard Oil Co., has again been chartered by the Standard to carry oil to the Orient.

The Petroleum Review (London, Eng.) presents a photographic illustration of the new tanker, Oberon, and says that the new tanker recently built to the order of Messrs. C. T. Bowring & Co. by Messrs. Armstrong, Whitworth & Co. discharged her first cargo of oil at the Thames Haven tanks in the latter part of March. She was chartered to the British Admiralty and brought a cargo of India oil from Rangoon.

The largest tugboat in the world, the tank steamer Iroquois, and the barge Navahoe, each having a carrying capacity of 10,000 tons of bulk oil, and owned by the Anglo-American Oil Co., arrived at New York in March. This was the first Atlantic trip of the barge, and the third of the steamer.

The Hermione, steel three-deck tank steamer, built by Swan, Hunter and Wigham Richardson, Ltd., Wallsend, Eng., for C. T. Bowring & Co., managers of the Oil Tank Steamship Co., made her trial trip on February 21st, and then sailed for Philadelphia. The leading dimensions are: length, 397 feet over all; 56.5 feet beam; depth, 31 feet 10 inches; capacity, about 7,000 tons bulk oil in several oil-tight compartments.

The Petroleum World for March contains an extended item of the trial trip of the steel tank steamer Buyo Maru, built at Walker by Sir W. G. Armstrong, Whitworth & Co., Ltd., to the order of Mr. E. A. Cohan (of Messrs. H. E. Moss & Co.) and sold by him to the Toyo Kishen Kaisha, had a trial trip on February 22d. Her principal dimensions are: length over all, 398 feet; length between perpendiculars, 385 feet; breadth extreme, 50 feet 6 inches; depth (moulded), 30 feet 9 inches. She is capable of carrying a dead weight of 7,100 tons on a moderate draught of water.

Economy in transportation and marketing is an essential in the profitable conduct of the petroleum industry. The latest effort in that line is being made at Oilport in the attempt to develop a system of subterranean pipeline for the loading of oil from the storage tanks into the tank steamers. The plan proposed is to construct 600 feet of pipeline under water, through which the oil may be pumped direct to the steamers without the necessity of the steamers landing at the regular pier or wharf. The pipe must, of course, rest on the bottom of the ocean; and it is probable that the temperature of the water (seldom above 52 degrees) will interfere with the movement of the oil through the pipe. This obstacle may, however, be overcome and the plan made successful.

The Petroleum Review reports that the Caspian tank fleet is actively preparing for the opening of navigation and all the engineering works at Baku are full of work in making and repairing machinery and fittings for the ships.

The Bayo Maru, the fifth tank steamer built by the Elswick Co. to the order of Moss & Co., the Petroleum Review (London) says is 398 feet by 50 feet 6 inches; carries a total deadweight of 7,100 tons on a moderate draught; built upon Swan's system for the carriage of liquid cargoes, whereby the variation in volume due to temperature change is absorbed within a specially proportioned expansion tank, which is so designed as to allow of a wide range of deadweight and trim.

The Standard Oil Co.'s barge 91, in tow of the tug Sea Rover, cleared from Port San Luis with a full cargo of oil for Point Richmond on April 17th.

The Santa Rita, one of the big tankers of the Union Oil Co., was reported to be loading at Port San Luis in mid-April for Chilean ports.

The steamer Alaskan was cleared from San Francisco for Honolulu via Seattle and Tacoma yesterday with 10,000 cases coal oil, 5,000 barrels fuel oil in bulk, 60 cases gasoline and 13 packages locomotive parts, valued at $34,449, as cargo from this port.

EXPORTS OF MINERAL OILS (*IN GALLONS) FROM PACIFIC PORTS OF THE UNITED STATES.

Twelve Months, 1907.	Crude.	Naphtha, Etc.	Illuminating.	Lubricating.	Residuum.
January	320,866	11,180	7,432,743	13,412	3,585
February	1,257,201	9,405	4,960,364	59,370	5,591
March	1,900,160	18,956	2,258,434	34,400	4,850
April	3,171,820	9,569	6,303,414	23,819	13,654
May	420,502	830	5,167,334	49,543	17,429
June	3,869	26,394	5,094,972	63,715	4,003
July	315,792	14,710	8,669,932	80,552	1,236
August	2,890	5,111	1,312,798	48,291	2,099
September . . .	2,109,040	14,910	2,889,117	50,488	3,879
October	423,563	6,244	7,302,340	54,242	11,807
November	420,110	7,470	19,389	36,252	10,425
December	3,969,164	5,392	3,435,056	36,156	12,399
Total	14,314,977	130,171	54,845,893	550,240	90,957

EXPORTS OF MINERAL OILS FROM ALL OTHER PORTS OF UNITED STATES FOR YEAR 1907.

Crude.	Naphtha, etc.	Illuminating.	Lubricating.	Residuum.
88,494,616	28,080,439	844,996,003	147,558,283	74,162,347
Grand Total, Year 1907.				
102,809,593	28,210,610	899,841,896	148,108,523	74,253,304
Shipments of Mineral Oils to Alaska From Pacific Ports of United States.				
9,104,300	640,881	515,044	100,145	. . . . .
Shipments of Mineral Oils to Hawaii From Pacific Ports of United States.				
38,916,400	484,435	1,427,577	262,468	. . . . .

[*U. S. standard 42 gallons per barrel is used for crude oils and 50 gallons per barrel for refined oils.—Ed.]

Exports of Domestic Mineral Oil From the Pacific Ports of the United States, and Shipments to Alaska and Hawaii, during February, 1908

CUSTOMS DISTRICTS	MINERAL OIL CRUDE		MINERAL OILS, REFINED OR MANUFACTURED							
			NAPHTHAS, ETC.		ILLUMINATING		LUBRICATING		RESIDUUM	
Domestic Exports—	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Alaska			150	51	1,550	309				
Los Angeles	3,060,000	75,000								
Puget Sound	588,422	9,129	1,891	240	893	169	327	70	10,475	528
San Diego					595	113	165	51	474	52
San Francisco	300	7	1,040	219	5,378,506	247,184	23,928	6,942		
TOTAL	3,648,722	84,136	3,081	510	5,381,544	247,775	24,420	7,063	10,949	580
Shipments to Alaska—										
From Puget Sound			31,512	4,850	22,390	4,768	6,062	2,688		
Shipments to Hawaii—										
From San Francisco	6,657,000	101,400	50,439	8,056	35,095	6,324	11,422	4,084		

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15c each:

Apparatus for extracting oil, Vandy J. Lauerman, Mineral Wells, Tex., 876,363.

Gland or swab holder, Wm. Slaydou, Denison, Tex., 876,601.

Pump, Sidney R. Blanchard, Ottawa, Ill., 876,618.

Oil pump, Dederick R. Colldeweih, Coalinga, Cal., 876,622.

Clamp for motion rods for oil wells, Jno. T. Hovis, Clintonville, Pa., 876,966

Process of refining, fractionating and reducing oils, Willet C. Wells and Frank E. Wells, Columbus, Ohio, 877,620.

Derrick, Patrick Yorke, Washington, Pa., 877,624.

Fish-horn, David Heyman, New York, 877,715.

Casing head, David K. Johnston, Oil City, Pa., assignor to Oil Well Supply Co., Pittsburgh, 878,068.

Mining process, Jacob Kirschnick, Zabrze, Germany, 878,208.

Pipe wrench, August R. Heimann, Coalinga, Cal., 878,388.

Engine, Robert M. Downie, Beaver Falls, Pa., assignor to Keystone Driller Co., same place, 878,783.

Well-drilling machine, Leroy K. Robbins, St. Louis, Mo., 878,827.

Earth-boring tool, Alexander Beldiman, Berlin, Germany, 878,856.

Well-drilling apparatus, Jas. K. Wally, Kittanning, Pa., 878,916

Stand-valve extracting means for oil-well pumps, Evelyn A. Copeland, Tionesta, Pa., 878,147.

Pumping device for oil wells, Henry D. Haven, Chicago, Ill., 878,166.

Process for solidifying mineral oils, Emile Raynaud, Brussels, Belgium, 879,193.

Draw-jack, Eli B. Tarr, Derrick City, Pa., 879,692.

Oil-cleaning apparatus, Linns W. Brown, Bakersfield, Cal., 879,728.

Casing tongs, John W. Brackney, Fullerton, Cal., 879,809.

Fishing tool, Wm. H. Button and Elbert Dyer, Brandon, Ore., 879,812.

Pump for oil wells, Robert S. Futhey, Los Angeles, Cal., 880,019.

Packer for deep wells, Chas. M. Heeter, Butler, Pa., 880,213.

Pipe-fishing tool, Robt. G. Sanford, Yonkers, N. Y., 880,404.

Sand pump and bail, Victor H. Palm, Butler, Pa., assignor to T. W. Phillips Mfg. Co., same place, 880,462.

STATEMENT OF DIVIDENDS

By California Stock and Oil Exchange, San Francisco, for Quarter Ended April 7, 1908.

Company.	No. of Div.	Date Paid.	Amount per sh.	Amount of Dividend.	Total paid to date.
Alma	11	Dec. 20, '07	$0.03	$1,400	$ 125,400
Amalgamated	8	Mar. 15, '08	1.00	50,000	400,000
Associated Oil Co.	4	Mar. 1, '07	1.50	420,000	1,522,309.39
Brookshire	24	Apr. 1, '08	.02	10,000	236,000
Caribou	35	Mar. 15, '08	.10	8,070	224,384.64
Chicago Crude	2	Mar. 25, '07	.00½	5,000	15,000
Claremont	34	Mar. 15, '08	.01	4,500	160,000
Esperanza	5	Dec. 12, '04	.01	1,250	6,250
Four	56	May 25, '07	.01	3,000	177,000
Hanford	30	Jan. 20, '06	2.00	4,000	80,000
Home	66	Dec. 20, '06	.01	1,000	440,000
Homestake	35	Mar 26, '08	.10	1,000	67,250
Illinois Crude	8	Feb. 1, '07	.01	2,000	19,500
Imperial	60	Apr. 6, '08	.60	60,000	1,520,000
Kern River	30	Apr. 3, '08	.10	2,000	80,000
Linda Vista	5	Apr. 7, '08	.01	3,838	14,354
Monte Cristo	53	Aug. 10, '07	.01	5,000	265,000
Nevada County	1	May 1, '07	.06	15,000	15,000
Peerless	59	Mar. 20, '08	.05	5,000	693,000
Piedmont	1	Feb. 6, '08	.01	3,537	3,537.30
Pittsburg	10	Nov. 11, '07	.24½	58,800	124,800
Reed Crude	8	Apr. 15, '05	1 20	120,000	1,101,000
Rice Ranch	8	Aug. 20, '07	.03	9,000	69,000
Sovereign	11	Oct. 8, '07	.01	5,000	65,000
Sterling	13	Jan. 27, '08	.05	12,500	197,000
Superior	2	Oct. 28, '07	.01	5,000	10,000
Thirty-Three	57	Apr. 6, '07	.30	30,000	640,000
Union	141	Mar. 20, '08	1.25	89,308	3,554,446.15
United Pet.	...	Mar. 20, '08	2.30	33,764	931,228.40
Wabash	4	Mar. 24, '08	.02	6,000	24,000
West Shore	37	Feb. 17, '08	.05	5,000	185,000
Total Dividends Paid to Date					$13,056,459.88

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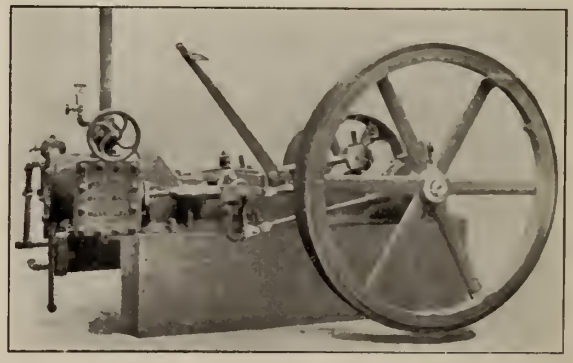

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WORLD'S PETROLEUM PRODUCTION.

The following table, taken from "Mineral Resources of the United States, Calendar Year 1906," on the production of petroleum in 1906, by W. T. Griswold, gives the figures of the world's production of crude petroleum for the last three years. The slight decrease in production noted in 1905 as against 1904 is shown also in 1906 as against 1905. This is due in 1906 chiefly to the decrease in output in the United States:

World's Production of Crude Petroleum, 1904-1906.

Country.	1904	1905	1906
United States	117,680,960	134,717,580	126,493,936
Russia	78,536,655	54,960,270	59,043,829
Sumatra, Java and Borneo.	6,316,169	7,334,310	7,399,024
Galicia	5,947,383	5,765,317	5,467,967
Roumania	3,599,026	4,420,987	6,378,184
India	3,385,468	4,137,098	4,015,803
Japan	1,418,767	1,341,157	*1,341,157
Canada	552,575	634,095	569,753
Germany	637,431	560,963	579,101
Peru	49,524	37,720	42,419
Italy	25,476	44,027	*50,000
All others	40,000	*30,000	*30,000
Total	217,589,434	213,983,524	211,411,173

*Estimated.

LATEST OIL STOCK REPORTS.

San Francisco Quotations.

Following are the latest quotations for California oil stocks listed on the California Stock and Oil Exchange.

	Bid.	Asked.		Bid.	Asked.
Amalgamated Oil.	75.00		Independence	.23	.24
Assoc. Oil Tr. Cer.	27.25	27.50	Junction	.34	.44
Assoc. Bonds, 5s.	75.00	78.00	Kern	.10	.20
Brookshire	1.50	2.00	Linda Vista	.25	....
Caribou	9.00	15.00	McKittrick	.20	....
Claremont	1.00	1.02½	Monte Cristo	.53	.59
Esperanza	1.25	2.00	Peerless	3.00	....
Fulton	1.75	2.00	Piedmont	.25	....
Graciosa	....	2.00	S. F. & McKittrick.	9.00	....
Home	.08	....	Sterling	1.90	2.25
Imperial	19.50	30.00	Sunset Monarch	.19	.20

Los Angeles Quotations.

Following are the latest quotations for oil stocks listed on the Los Angeles Stock Exchange.

	Bid.	Asked.		Bid	Asked.
Amalgam'd Oil.	52.25	63.00	Rice R. Oil Co..	.70	1.10
Assoc. Oil	27.00	28.00	New Pa. Oil Co..	.75	1.00
Brookshire Oil.	2.06	2.20	Pinal Oil Co.	....	20.00
Central	.85	1.05	Olinda Oil Co...	.09	.12¼
Columbia	.80	.92	Piru Oil & L. Co.	.06	.12
Continental	.16	.19	Reed Crude	.10½	.26½
Elk Con. Oil Co.	.07	.10	Union	207.00	209.50
Fullerton Oil...	.45	.75	Union Prov. Co..	204.00	210.00
Globe	.10⅝	.15	United Pet.	350.00	370.00
Mexican Pet.	1.25	1.40	Western Union.	60.00	105.00

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Coalinga	49 x 82	$10.00
Santa Maria and Arroyo Grande	49 x 80	10.00
Santa Maria and East Extension	72 x 44	10.00
Sunset-Midway-McKitterick	39 x 70	10.00
Kern River	36 x 44	5.00
McKitterick & Templor	41 x 66	10.00

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"How did his idea originate?

"And what was his purpose in building the greatest millionaire-making organization that the world has ever seen?

"The answering of these three questions makes it necessary to dig up the romantic story of Samuel C. T. Dodd, the legal builder of the Standard Oil Trust, who rose from a log cabin in a Pennsylvania wilderness to be the first great corporation lawyer in the world," says Mr. Herbert N. Casson, in the new Broadway Magazine for February.

This man was the inventor of trusts. He created Standard Oil and protected it for twenty-five years, dying three years ago, practically unknown to the American people. During his incumbency as attorney-in-chief it paid $500,000,000 in dividends, increased its share of the American oil business from 4 per cent to 85 per cent, enlarged its yearly output from a few trainloads of oil to 22,000,000 barrels, and widened the sphere of its usefulness until it sold its product to fifty countries, transported on its own fleet of 100 steamships.

Dodd was responsible for this success. He brooded over Standard Oil like a man with one chicken. The trust was his one idea, and to protect and develop it his only purpose. By descent he was Scotch-Irish. He was born in a log cabin in the Pennsylvania forests near Franklin in 1836, one of seven children of a "poor, religious, and austere" carpenter. In his youth he was errand boy, grocer's helper, and printer's devil. Desirous of becoming a lawyer, after many vicissitudes he became one in 1859—the year of the first oil well. This was a time of big ideas and activities, following the panic of 1857. The first Atlantic cable had just been laid. The closed Kingdom of Japan had just been opened. Railways had been extended to Chicago, St. Louis, and the gold mines. The telegraph, the reaper, and the sewing machine had just been adopted, and the whole structure of civilization was being changed.

Dodd seldom appeared in court. He was the brains behind the scenes. But he could talk, too, if he chose. Before a legislative committee at Albany that attempted to grill him in the early '80's, he answered endless questions with quiet dignity, until the ignorance of his inquisitors had passed the limit. Then he arose and made a speech which they never forgot. He explained how competition and combination are the two eternal laws of trade. He showed the evils of blocking the natural expansion of business. He was aroused at the apparent flippancy of several of the legislators, and his words soon began to lash and sting.

"Do not try to suppress a business," he said, "because it has grown larger than the small notions of some people. Think of those who tore up railroad tracks because the stagecoach business was endangered, and avoid their follies. I tell you that the business of the future will be on a larger scale than either you or I can imagine, and the whole world will reap the benefit."

In 1880 there was no law against corporations. They were created by legislatures and not by Congress, but there was no way to consolidate two or more. "A corporation of corporations" was what he sought, and in 1882 he found a way. He drew up an agreement by which forty oil companies, formerly belligerent, agreed to work together in harmony. They elected nine trustees, into whose hands all the stock of the forty corporations was entrusted. As receipts for the stock all shareholders received "trust certificates." The agreement was to continue until twenty-one years after the death of the last trustee. Yearly salaries were to be paid the trustees—not more than $25,000 each—and they were to be elected year by year. The name of the new merger was the Standard Oil Trust. Hence originated the term "trust" for business federations. Dodd defined a "trust": "It is any combination that is conducting a legitimate business on a large scale."

This agreement was kept secret for six years. It was the Magna Charta of the trusts. It was the origin of the "holding company," and the motif of a new industrial system. For ten years this agreement held the forty companies together, and Congress and the State of Ohio failed to break it in two separate assaults. However, a revision was necessary and the word "trust" was dropped, but the men and the methods remain the same. For twenty-six years the Dodd idea has held the Standard Oil men together and made possible the great development of their interests.

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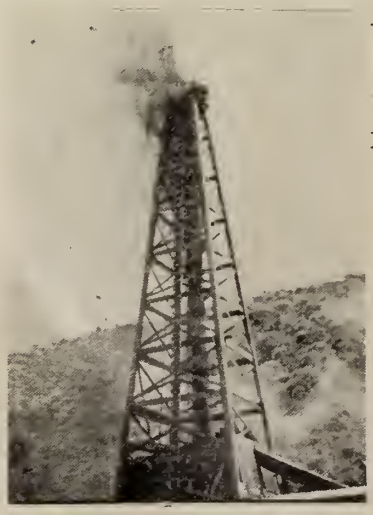

W. E. Youle, San Luis Obispo, Cal.

CALIFORNIA STATE

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., May, 1908 No. 3

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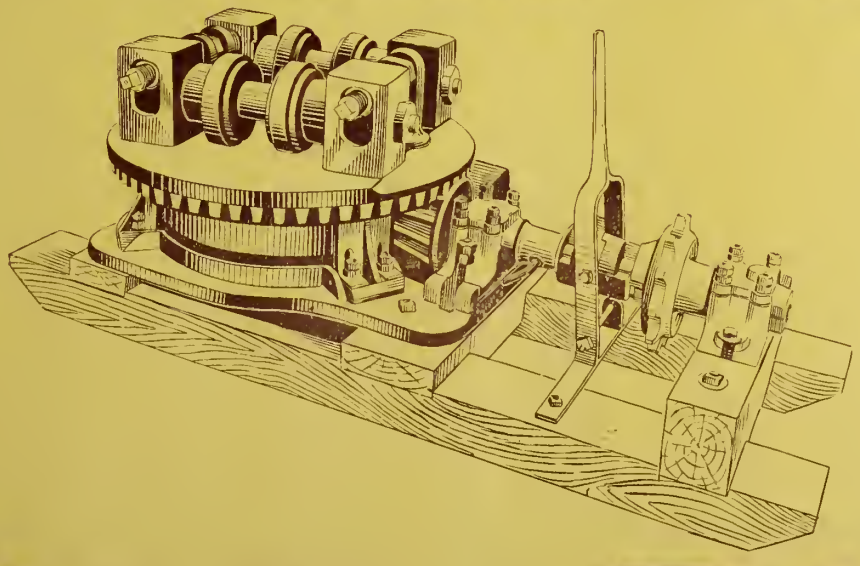

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., May, 1908 No. 3

THE UTILIZATION OF SLUDGE

By J. C. Christensen, B. S.

Sludge is a by-product of oil refining, formed upon agitating the oil with strong sulphuric or Nordhaussen acid, and consists of sulphonic acids, asphalt-line oils or pitches, free sulphuric acid, phenolic compounds, and the like.

Many oil refiners have found the disposal of the sludge a difficult and sometimes expensive proposition. In cities the sludge must not be allowed to enter the sewers, for the asphalt would soon clog them; neither can it be run into a river, for the acid would kill the fish. If run into the ocean the acid is so largely diluted and perhaps neutralized by the carbonates in the water that it soon becomes innocuous; but care must be taken even here that the oil accompanying the sludge is carefully retained or it will accumulate on the bathing beaches in the form of sticky masses of viscous oil, which does not dry.

Expensive Methods.

In view of these facts some refineries have been compelled to purchase city lots, excavate deep pits in them and haul the sludge in iron tank wagons to these burial places. Others have allowed the sludge to run into the ground, where it slowly dries up, and from time to time have covered over the mass with old mortar, sand or earth. Both of these methods are expensive, in each the sludge is a dead loss, and sometimes a nuisance in the neighborhood on account of the odor; and the acid in the mass is always a menace to sewer and water pipes and to all iron buildings near by. In places where surface water is used the water has always been found strongly contaminated with acid.

When one remembers that the sludge obtained is equal in volume to from 7 to 12% of the crude oil refined, the quantity to be disposed of by even a small plant is seen to be a matter of importance.

Recovery of the Acid.

The simplest solution of the problem would be to establish an acid recovery plant at the refinery, remove most of the acid from the sludge and burn the tar as described by the author in the "California Derrick," Vol. 1, No. 1. This method of procedure would hardly be tolerated in a city on account of the nuisance created by the acid gases resulting from the burning of the tar, which still retains from 10 to 20% of acid. The gases from the burning tar can be dissolved in a spray of water and thus run off into the sewer; but this interferes with the draught of the chimney, and unless much water is used the results are unsatisfactory.

In a second method which found some favor, the acid is recovered from the sludge as previously described, and may be sold to the acid works or concentrated at the refinery. The "tar" is mixed with about an equal volume of "residuum" or heavy crude oil, to take up any excess of acid, and the mixture distilled. By this means the acid still remaining in the tar is destroyed, a distillate used for "stove oil," and coke is obtained. The distillation requires great care in order to prevent foaming over, and only experienced men should be entrusted with it. During the distillation foul smelling gases are evolved, which had best be conducted under the boilers and burned. After each run the still must be cooled, opened and the coke removed by pick and shovel. Contrary to what might be expected, the coke is comparatively free from sulphur. Asphalt cannot be made by this process because the acid renders the mass brittle and mealy, rather than tough, a condition due to the separation of free carbon.

For Paving or Briquettes.

But what promises to be a most satisfactory process is one not yet in extensive use, viz.: the neutralization of the tar or sludge with limestone, dolomite, megnesite or other naturally occurring carbonates. In order to accomplish this the tar should be run into a large tank provided with a mechanical stirrer and the powdered carbonates added until gas is no longer evolved. The reaction proceeds vigorously, the sludge becomes quite hot, therefore more limpid, carbon dioxide is generated in large quantities, causing the mass to froth, and finally a black, perfectly neutral mass closely resembling asphalt is obtained, which, however, contains salts of calcium (chiefly sulphate.) The product thus obtained may be distilled until of the proper grade for street paving; or, since its acid has been destroyed, may be immediately used as a "binder" in the manufacture of "briquettes" from coal screenings. Immense deposits of limestone and dolomite occur in various parts of the state and could probably be obtained for a few cents per ton.

RESIDUAL PITCHES FOR PAVING.

Residual pitches are obtained in the distillation of the asphaltic petroleum of California, the semi-asphaltic petroleum of Texas, and of some paraffin petroleum. The residues from California petroleum have been used to a considerable extent in the paving industry and are generally known as "D" grade asphalt or by some special trade designation or brand. According to Richardson (The Modern Asphalt Pavement, 1905, p. 253) this "D" grade asphalt, when properly made, contains not over 10 per cent of fixed carbon, while the asphalt from Texas oil contains a higher per cent of this constituent. The more liquid portions of these residuums are used in compounding sheet asphalt, in which they constitute from 12 to 50% of the composition. For this purpose, California oil should be from 10 to 13° B.; Texas oil, 14 to 16° B.; Eastern oil, 18 to 22° B.; and all should have a flashing point above 350° F. to be suitable for use. Other petroleum products used in the paving industry are Pittsburg flux, produced by heating a gallon of ordinary Pennsylvania petroleum residnum with about one pound of sulphur; Ventura flux, made by treatment of the California residuum in a similar manner; byerlite, formed by oxidizing Pennsylvania residuum by sucking air through it, Byerly of Cleveland having found that oxygen, like sulphur, effected a condensation of the residuum; and hydroline B., produced by blowing air through the "aspaltic" residuum from Texas petroleum. These substances are prepared for use as fluxes for native asphalt. By blowing the crude with air similar oxidization and inspissation takes place. If the oil be warmed at the start, the oxidization not only maintains the temperature, but causes it to rise as high as 900 degrees F.—Charles E. Munroe, in Bulletin 70, Census of Manufactures, Bureau of the Census, Department of Commerce and Labor.

TAKING GASOLINE FROM NATURAL GAS

By A. S. Cooper and H. N. Cooper.

Atmospheric air is composed of the gases oxygen, nitrogen, argon, carbon dioxide and a small quantity of other gases.

Natural gas consists, in varying proportions, of the gases methane, nitrogen, carbon monoxide, carbon dioxide and oxygen.

Under certain conditions the gases contained in the air and natural gas will hold in suspension the lighter parts of petroleum oil.

When natural gas or air is passed through gasoline some gasoline is taken up in solution. The quantity taken up depends upon the pressure and the temperature of the natural gas or air while in contact with the gasoline.

If natural gas or air is passed through crude oil the lighter parts of the oil can be recovered by methods stated below.

Laboratory experiments: To a 1-gal. bottle of air was added exactly one-fifth cc. of gasoline, of the so-called 74 Be. This gasoline distilled over from 70-75° C. The pictnometer showed that 1cc. of the gasoline above used weighed 670 m. g. Therefore the weight of the gasoline admitted into the bottle of air was 134 m. g.

Enclosed in an absorption tube, about 30 cc. of the lubricatiug oil called "Atlantic Red" was used as an absorbent and the gasoline charged air was sucked through the oil. A recovery of 65% of the gasoline was affected. Thinking this a low figure a fresh 30 cc. of "Atlantic Red" was put into a clean absorption tube and the same amount of air (1 gal.) was sucked through. The "Atlantic Red" lost 12 m. g. in weight, which would raise the above recovery of 65% to 74%.

A clean absorption tube was taken and about 30 cc. of "Glymol" introduced as an absorbent. Glymol is a colorless, odorless, practically non-volatile hydrocarbon oil, which is sold in the drug trade as a carrier for medicaments. The sample of glymol used by us commenced to distill at 280° C. The recovery effected by glymol as an absorbent was 77%.

Afterwards the glymol was distilled and the pure water white gasoline was obtained from it, identical with the gasoline that was introduced into the 1-gal. bottle.

The above experiments were carried on at the ordinary room temperature of about 18° C. A lower temperature would give a greater absorption percentage.

All natural gas found in or near an oil field contains a larger quantity of gasoline than does gas taken some distance away from the oil field.

In nature nearly all natural gas is held in solution with water or oil.

It stands to reason that gas coming out of solution from crude oil will carry more gasoline than gas coming out of solution from water.

Gas coming from a light oil will yield more gasoline than gas coming out of solution from heavy oil.

The greater the quantity of gasoline present in gas the greater its luminosity, consequently, the quantity of gasoline present in gas can be fairly determined by photometry.

Gas coming from wells in California carry in solution from one-half to one gallon of gasoline to each one thousand feet of gas.

The greater the pressure exerted upon a gas the less gasoline it will hold in solution.

The colder the gas the less gasoline it will hold in solution.

Gas coming from a well under high pressure will not yield as much gasoline as gas coming from a well under low pressure. As before stated, this is owing to the fact that gas under high pressure will not carry in solution so much gasoline as gas under low pressure.

When gas is drawn from a well with pumps the pressure is less than when the wells flow unassisted.

In many of the Eastern gas fields gas is drawn from the wells in pumps, frequently a vacuum of twelve pounds to the square inch is produced in the wells. The removal of twelve pounds of atmospheric pressure is equal to the removal of twenty-seven feet or water from the surface of the water in the well. The removal of twelve pounds of atmospheric pressure permits the gas to come out of solution from the water and oil. Cooper's gas lift can remove a greater pressure from the well by removing and keeping removed a larger column of water from the well.

A large quantity of gasoline is lost by avaporation through the storage of petroleum oil in tanks. This loss could have been saved by the passage of natural gas through the oil, which would carry away the gasoline in solution and it could be recovered by one of the methods described below.

When petroleum oil or heavy oil with gasoline in solution is heated gasoline is vaporized and removed. The vapors of gasoline can be condensed by a suitable apparatus.

Gasoline can be recovered from the air or from natural gas either by refrigeration, compression or absorption.

When natural gas taken from wells is compressed for transportation through pipes, light hydrocarbons are condensed, the greater the pressure the greater the amount of condensations from a given gas.

When natural gas is taken from a well and the pipes conveying it are exposed to the air, light hydrocarbons are condensed, the colder the weather the greater the condensation from a given gas.

When gas containing gasoline in solution is passed through cold heavy oil the gasoline is absorbed by the oil. The gasoline can be recovered from the oil by distillation.

The gasoline obtained from natural gas is very limpid and has but little odor and is of a light specific gravity.

As the demand for gasoline is constantly increasing this character of gasoline will always be worth at least fifteen cents a gallon.

The natural gas which has been deprived of its gasoline can be used to operate the apparatus by means of which the gasoline is abstracted from the gas. A plant can be arranged so that only one man will be required to operate it.

Working models employing the methods given above have been constructed by the authors.

One model employs compression and refrigeration and the other absorption by heavy oils. Both of these models demonstrate the fact that gasoline can be taken from natural gas in commercial quantities and at a profit.

NATURAL GAS RESOURCES AND USES.

The commercial values of the natural gas resources of California have not been established for the reason that the possible industrial uses of natural gas have not been thoroughly tested and proven. The attention of both big and little operators in the oil fields for the past ten years has been directed to the development and production of the petroleum and asphaltum resources. In the past five years the Independent producers have been kept busy holding on to the ragged edge of a prospect for future profitable production of oil; and the corporations have not been so idle that anyone could notice it; albeit, the energies of the latter have not displayed in precisely the same line of effort as that of their smaller competitors.

It is admitted by experts that there is enough natural gas wasted in the petroleum oil fields of California to furnish light and fuel for practically all of the larger cities in the State.

In the Coalinga field natural gas is used extensively for fuel in the generation of steam and for direct power, effecting a large economy in fuel costs. In this field there are some 75 or more Reid two-cycle drilling engines and D. C. U. drilling engines using natural gas for steam generation or for direct power; many of them having been in constant use for the past four years, giving satisfactory results.

The latter-named type of drilling engine is convertible from steam power to direct gas power by an exchange of cylinders. The principle of employing the gas for direct motive power is very simple. The gas is turned into the cylinder, where it is primarily ignited by an electric spark which, after the engine has become heated, ignites of its own motion. A small water tank is placed at a point whence the water gravitates to the engines and flows constantly around the cylinder, being forced back in the top of the tank as it becomes heated.

TWO TRANSACTIONS UNSURPASSED IN THE HISTORY OF PACIFIC COAST OIL INDUSTRY

Union Oil Company of California Increases Capital Stock $40,000,000.

The Union Oil Company of California has become a $50,000,000 corporation, increasing its capital stock to that figure from $10,000,000 (on May 21), with absolutely no increase in the price of the shares. On the contrary, as the California Derrick is informed by Mr. Donzel Stoney, the company's attorney, the effect will be the reverse. In other words, the Union Oil Company will thus be in a position to handle a larger increase in the amount of business than has been possible in the past—in the production, the transportation, and the refining of petroleum. Instead of a decrease in the values of the holdings, the tendency of this enormous expansion will be to materially increase the earnings and thus enhance the values. The company owns more than 80,000 acres of proven and producing oil lands (in 11 counties) in California. This expansion will necessarily demand a greater production of crude, and will include an increase of about 50 per cent in the capacity of the Oleum refinery, which has already been doubled within the past 18 months. The asphaltum plant at Bakersfield will also be increased. Mr. Stoney declined to state the present capacity at Oleum, saying that it is a matter with which he is not acquainted, and which the company does not make public, though admitting that it is second in the State. But the California Derrick feels safe in estimating that the contemplated expansion will place the Oleum refinery pretty well up toward the 25,000-barrel class. The expansion contemplates an extension of pipelines and also a large increase in facilities for transportation by water, requisite to the growing foreign market as well as the domestic. The company is now shipping at the rate of 275,000 barrels of fuel oil per annum to Chile, which will soon be very largely increased. The Chilean shipments now go to La Compania Selitrera Alemana at Taltal, and to the Anglo-Chilean Nitrate and Railway Company at Tocopilla. On April 16th the company made another shipment from Port San Luis of 43,000 barrels of crude to Ancon for trans-shipment through the company's pipeline across the Isthmus of Panama. Mr. Stoney states that these shipments (which have been in progress for about six months) for pipeline trans-shipment, so far, have been consigned only to the Panama Railway, and to the United States Government for consumption on the canal, this business having not yet been extended to Atlantic Coast States. While the contemplated expansion will not at present include an increase in bulk (tank) exports of refined oil, the matter will be taken up at the proper time.

The Union Oil Company now has shipping stations at Astoria, Portland, Seattle, Stockton, San Jose, Los Angeles, San Luis, San Diego, Oakland and San Francisco. The head office of the company is now at Oleum, where the transaction of the board of directors, increasing the capital stock, was done. The branch offices, besides the stations already mentioned, are: New York, Chicago, London, Honolulu, Panama, Valparaiso, Tocopilla, Toltal. The tank vessels are: Steamships Santa Maria (52,500 bbls.), Santa Rita (52,500), Lansing (50,000), Argyle (30,000), Roma (29,000), Washtenow (29,000), Whittier (11,000); barkentine Fullerton (16,000); ship Santa Paula (8,000); also several barges of various capacities operating in San Francisco bay. Pipelines: Santa Maria field to Pt. San Luis (2 lines), Ventura field to Ventura, Orange and Los Angeles counties to San Pedro, Panama pipeline connecting Pacific and Atlantic oceans.

The increase of capital stock will all be taken by the present stockholders and by the two holding companies (the Union, Provident and the United Petroleum), which will always hold control of the Union Oil Company of California. Mr. Stoney stated that there is absolutely no affiliation in this, or any other transaction of the directors with the Standard Oil Company; the control by the two holding companies being an absolute bar to any such result. The sole purpose of the present expansion is to provide for an augmentation of the facilities for taking care of the increasing business of the operating company.

The directors who transacted the business of expansion are: Lyman Stewart, president; W. L. Stewart, first vice-president; John Baker, Jr., second vice-president; J. S. Torrence, treasurer; Giles Kellogg, secretary; W. R. Statts, F. A. Bolt and James H. Adams. Three directors were absent: E. T. Earle, Frank A. Garbett and W. W. Orcutt. Donzel Stoney, attorney, directed the transaction.

Mr. John Baker, Jr., sailed May 23 on the Lansing, which carries a cargo of oil, for Chile; he will visit the several stations of the company en route and view the conditions and combine a pleasure trip with the business voyage.

American Petroleum Company Buys Oil Lands Valued at $2,000,000.

One of the most important oil land deals that has been made in California has just been closed (May 17) wherein 1280 acres of proven oil land on the west side of the Coalinga field has passed to the well-known oil operator, E. L. Doheney and associates. The consideration paid for this splendid territory approximates $2,000,000. The new company is the American Petroleum Company. The territory acquired comprises the west half of section 30-20-15, purchased of H. H. Walsh, et al.; the west half of section 18, and the east half of section 6-20-15, purchased of the Pleasant Valley Farming Company; the southwest quarter of sections 32-19-15, purchased of Tom A. O'Donnell et al. The importance of this land is the fact that it cuts out the heart of the proven undeveloped territory in the west side field, with the single exception of the Southern Pacific Company's holdings. It lays along some of the most productive territory on the west side, and practically cleans up all of the proven territory. The new company will commense development work at once, and will continue drilling until they have a production of at least 10,000 barrels per day. This at once demonstrates the value of this field when men like Doheney enter the lists. A word will not be amiss in this article as to who is E. L. Doheney, known to every oil man in the west. Mr. Doheney is one of the most promiuent men in the oil industry, easy of approach, and thorough business. He is regarded as one of the wealthiest men in the business in the west. His history is very interesting in itself, is a part of the history of the development of the oil industry as a fuel proposition in the west. He was the discoverer and one of the principal developers of the Los Angeles field. This discovery started the campaign of education in the use of fuel oil; was the feature that taught the world of steam users how to use fuel oil of the heavy gravity; made it possible to supplaut coal on the Pacific coast. Mr. Doheney developed what is known as the Fullerton field; he afterwards became heavily interested in the Kern River field. His latest success was the development in new territory of the property of the Mexican Petroleum Company, in the Republic of Mexico, which is too well known to give in detail in so short an article. This Mexican property is conceded by oil men to be a very valuable property. That the field of Coalinga has attracted such men demonstrates the value of the territory, and the ever-growing industry, and Coalinga is, indeed, fortunate that this deal has been made. This important deal was arranged and consummated so quickly that the oil operator and the oil men of this section were taken by surprise, as it was practically made and closed before anyone outside of the parties in interest were aware that such a deal was on. The negotiations for this property were arranged and closed by Tom. A. O'Donnell of Coalinga.

THE NEW STEAMER LURLINE.

The steamship Lurline, built at Newport News for the Matson Navigation Company, San Francisco, arrived here on May 30th, carrying coal consigned to the navy. The Lurline, with Captain Weeden in command, made the trip with coal fuel; but will be fitted out with oil burners before being put on the Honolulu run, for which service the vessel was built. The dimensions of the vessel are: Length, 438 feet; beam, 53 feet; gross tonnage, 6200 tons. On the trial trip the Lurline made 14½ knots, and will be able to increase that speed when equipped for oil fuel. The vessel is equipped for passenger, general cargo and commercial oil.

PROPOSALS FOR OIL.

Sealed proposals for supplying illuminating and lubricating oils to vessels of the revenue cutter service at ports on the Pacific Coast during the fiscal year ending June 30, 1909, will be received at the Treasury Department, Washington, D. C., until 2 p. m., June 2, 1908; also for oil required at Atlantic, Gulf and Pacific ports, the Great Lakes, Honolulu, San Juan (Porto Rico). Schedule will be furnished upon application to Purchasing Officer, U. S. R. C. S., Appraisers' Stores, San Francisco.

FORTY PER CENT DIVIDEND.

The Petroleum World of London reports that the California Oil Fields, Ltd., has declared a final dividend for 1907 of 25 per cent, making a total dividend for the year of 40 per cent, as against 30 per cent in 1906. The company began paying dividends in 1903-4 and has distributed 115 per cent. In addition to the larger distribution this year the sum of £10,000 has been transferred to the reserve fund; the same amount as set aside in 1906.

GOVERNMENT OIL INVESTIGATION

Review of Statistical and Technical Facts Submitted to the President by the Commissioner of Corporations.

By Lewis H. Eddy

Editor's Note—The preceding articles in this series were: I—Crude Oil Production. II—Various Crude Oils. III—Refining Operations. IV—Lubricating Oils.

The preceding article (IV) on Lubricating Oils dealt with prices and values. The present article relates to tests and comparisons of values, and of prices, of Standard and Independent lubricating oils.

V.

LUBRICATING OIL TESTS

By the Norfolk and Western Railway Engineer of Tests.

The report states that in the late summer of 1904 the New York Lubricating Oil Co. and the Union Petroleum Co. submitted bids to the Norfolk & Western Railway for railroad lubrication for the year 1905; but the Norfolk & Western decided to continue the trade with the Galena-Signal Oil Co. through 1905 in order that the oils of the three companies might be thoroughly tested. The tests were started in April and continued into October, 1905.

The Commissioner presents in detail a history of the tests and discusses the methods of the engineer of tests and the merits of his findings, with which he does not in all particulars agree. For the purpose of this review only the statistical and technical features of the Commissioner's report are here given.

The engineer of tests states that the freight engines used in this road-service test were run in regular freight service between Crewe and Lamberts Point; the passenger engines were Class "J" engines pulling the "Cannon Ball" trains between Richmond and Norfolk; the coaches were in these trains. There were three freight engines and tenders, three passenger engines and tenders, and three passenger cars; one of each being assigned to the test of the oils of each of the three oil companies. The oils of the Union Petroleum Co. were found to be better than those of the New York Lubricating Oil Co., and as both the invoice price and the mileage guarantees were lower for the first-named than for the second, only the Galena oils and the Union oils are considered in this review.

The number of miles run during the test by the engines, tenders, and cars using the Galena and the Union oils are given in the following table.

In this table, as in others employed in this review, the facts and figures are accurately reproduced, though the form differs; and in some instances tables may be combined or rearranged for the sake of necessary brevity.

The oils of the Galena-Signal Oil Co. are designated as "A" oils, those of the Union Petroleum Co. of "C" oils.

	No. of Miles Run.	
	"A" oils.	"C" oils.
Freight locomotive and tender	18,739	17,188
Passenger locomotive and tender	27,152	22,571
Passenger car	19,743	20,511

For comparative purposes the data on (1) consumption of oil and (2) wear of the lubricated surfaces were reduced to a common basis of 1000 miles run, and later a combined "wear and consumption" per 1000 miles was computed.

The pistons and piston rings were lubricated with valve oil. The wear in cubic inches was computed from vertical and horizontal measurements and the length of the wearing surface for the pistons and from loss of weight for the piston rings. Stated per 1000 miles run, it was as follows:

	Pistons.		Pistou Rings.	
	"A" oil.	"C" oil.	"A" oil.	"C" oil.
Freight locomotive	0.118664	0.080938	0.179515	0.063182
Passenger locomotive.	.047591	.000000	.119916	.200700
Average	.083128	.040469	.149716	.131941

The average diametrical wear on driving-box crown brasses, driving-axle journals, side-rod brasses, crank-pins, eccentric blocks, and straps, in inches per 1000 miles run, was computed from vertical and horizontal measurement at inside, center, and outside; on locomotive truck journals and measurement was similar.

These seven computations resulted as shown by the following tables:

Wear on Driving-box Crown Brasses.

	"A" oil.	"C" oil.
Freight locomotive	0.001307	0.001687
Passenger locomotive	.003075	.001794
Average	.002191	.001741

Wear on Driving-axle Journals.

	Main.		Auxiliary.	
	"A" oil.	"C" oil.	"A" oil.	"C" oil.
Freight locomotive	0.000597	0.000797	0.000384	0.000652
Passenger locomotive.	.001702	.000572	.001101	.000385
Average	.001150	.000685	.000743	.000519

Wear on Side-rod Brasses.

	"A" oil.	"C" oil.
Freight locomotive	0.000523	0.000535
Passenger locomotive	.000726	.000382
Average	.000625	.000459

Wear on Crank-pins.

	Auxiliary.		Main.	
	"A" oil.	"C" oil.	"A" oil.	"C" oil.
Freight locomotive	0.000507	0.000163	0.000277	0.000204
Passenger locomotive.	.000103	.000106	.000350	.000253
Average	.000305	.000135	.000314	000229

Wear on Eccentric Blocks.

	"A" oil.	"C" oil.
Freight locomotive	0.000667	0.000070
Passenger locomotive	.000519	.000403
Average	.000593	.000327

Wear on Eccentric Straps.

	"A" oil.	"C" oil.
Freight locomotive	0.000629	0.000361
Passenger locomotive	.000796	.000000
Average	.000713	.000181

Wear on Truck Journals.

	"A" oil.	"C" oil.
Freight locomotive	0.000085	0.000268
Passenger locomotive	.000446	.000425
Average	.000266	.000347

Measurements of the distance between hub liners showed the following average wear, in inches per 1000 miles run:

Freight locomotive	0.001734	0.003898
Passenger locomotive	.003499	.001994
Average	.002617	.002946

Tenders and passenger cars were lubricated with car oil. The average diametrical wear on the journals in inches per 1000 miles run, ascertained by measurements at inside, center, and outside, and the average wear on the brasses in pounds per 1000 miles run, ascertained by weighing the brasses before and after the test, are shown in the following tables:

Wear on Tender and Car Journals and Brasses.

	Journals.		Brasses. a	
	"A" oil.	"C" oil.	"A" oil.	"C" oil.
	Inch.	Inch.	Pound.	Pound.
Freight tender	0.000142	0.000099	0.011100	0.060029
Passenger tender	.000457	b .000424	.075382	.106153
Passenger car	.000703	.000479	.159256	.103681
Average	.000434	.000334	.081913	.089954

a—Only brasses not removed during the test were considered.

b—One journal was excluded on account of high wear and excessive number of hot boxes due to faulty bearing.

The average wear in pounds per 1000 miles run, for the main-rod and wrist-pin brasses was computed from the weights before and after the test, and are given in the following table:

Wear on Main-Rod and Wrist-Pin Brasses.

	Main-rod brasses.		Wrist-pin brasses.	
	"A" oil.	"C" oil.	"A" oil.	"C" oil.
Freight locomotive	0.052563	0.049983	0.028763	0.010472
Passenger locomotive.	.037989	.059532	.003978	.022272
Average	.045276	.051758	.016371	.016372

The record of this service test also shows for the parts lubricated with engine and car oil the number of times each bearing was sufficiently hot to delay the train or require renewal, or was sufficiently warm to require special attention. The following summary of totals is made up from the detail table in the Commissioner's report:

Total Number of Hot and Warm Bearings.

	No. of Bearings Tested.	Number Hot. "A" oil.	Number Hot. "C" oil.	Number Warm. "A" oil.	Number Warm. "C" oil.
Locomotives:					
Freight	32	3	1	20	42
Passenger	32	5	3	177	76
Total	64	8	4	197	118
Tender trucks:					
Freight	8	0	1	0	2
Passenger	8	3	8	28	24
Total	16	3	9	28	26
Passenger cars	8	3	3	0	0
Grand totals	a 88	14	16	225	144

a—The 88 bearings means the total tested with each oil.

NOTE.—The report says that the large number of hot bearings on the passenger tender using "C" oil cannot be charged against the oil, as 7 of the 8 cases occurred with one bearing, and the wear on this journal was six times the average wear on the other journals of the same tender, clearly indicating its defectiveness.

The Commissioner takes issue with the engineer of tests employed by the Norfolk & Western Railway as to the method pursued in attempting to combine the results as to the wear with the results as to consumption of oil, which results are shown in the following table.

It is not the purpose of this review to take up this discussion as to the methods of the engineer or the merits of his findings. The readers of this series of articles who desire to go further into the matter than here presented will find the complete history of it in Part 2 of the Commissioner's report on the Petroleum Industry.

Total Wear and Consumption.

	"A" oil.	"C" oil.
Total wear	0.386355	0.338307
Total oil consumption	49.09	51.25
Total wear and consumption	49.47	51.59

The report says that "the figures which the engineer of tests accepted as measuring the relative value of the "A" (Galena) and "C" (Union) oils showed that the wear with the "A" oils was 14.2 per cent more than with the "C" oils, while they showed that the consumption of the "A" oils was 4.2 per cent less than that of "C" oils."

When the road-service test had been in progress for four months it was supplemented with a test on the Thurston oil-testing machine. The comparative results judged by the frictional resistance at surface of journal at end of test, and the temperature of bearing at end of test are shown in the following table:

Results of Test on Thurston Oil-Testing Machine.

	Frictional Resistance. (In Pounds.) "A" oils.	Frictional Resistance. (In Pounds.) "C" oils.	Temp'ture of Bearing. (In Degrees Fahr.) "A" oils.	Temp'ture of Bearing. (In Degrees Fahr.) "C" oils.
Valve oil	52.50	82.50	166	184
Engine oil	45.00	60.00	136	146
Car oil	45.00	48.75	143	144

NOTE.—The report of the Engineer of Tests (reproduced in the Commissioner's report) states that the machine was run at a surface speed of the journal of 453 feet per minute with a load of 250 pounds per square inch; and that this surface speed is equal to 19.4 miles per hour for cars with 33-inch wheels, and 20.5 miles per hour for Class "W" locomotives.

For discussion of this test the reader is referred to the Commissioner's report; and for a discussion of Professor Thurston's machine, see "Friction and Lost Work in Machinery and Mill Work," sixth edition, 1898.

The report of the engineer of tests was submitted to the president of the Norfolk & Western (through the superintendent of motive power) on December 16, 1905; on December 8th the Union Petroleum Co. had been asked to submit a bid for 1906, which was submitted on December 12th.

The Galena-Signal Oil Co. submitted an oral bid on the same basis as proposed in 1904, about January 3, 1906, the Galena reduced its bid.

The bid of the Union Petroleum Co. and the two bids of the Galena-Signal Oil Co. are here given.

Comparative Bids of Union and Galena—1906.

	Union Pet. Co.	Galena-Signal Oil Co.	
Invoice prices per gallon (bulk):			
Valve oil	$0.26	$0.48	$0.48
Engine oil	.12	.28	.28
Car oil	.06	.18	.18
Milage guaranties (per 1000 miles):			
Locomotive service	1.45	2.00	1.80
Passenger car service	.04	.10	.05
Freight car service	.04	.08	.07

During the year 1905, the report says, the Norfolk & Western Railway bought oils amounting to an invoice of $70,997, but the total guaranteed cost was $59,997, so it received a refund of $11,020; thus paying 84.5 per cent of the invoice cost.

By applying the invoice prices and mileage guaranties for the year 1906 to the number of gallons used and the number of miles run in 1905, the report says the totals would have been as follows:

	Invoice Cost.	Guaranty.
Galena-Signal Oil Co.	$70,997	$60,251
Union Petroleum Co.	29,903	43,551
Saving by Union Pet. Co.		$16,700

NOTE.—Under these bids the railway company would pay the lower cost, whether invoice or guaranty. Only the lowest (or second) bid of Galena-Signal here indicated.

Taking the gallonage of each lubricating oil purchased in 1905 for use other than on rolling stock, and applying the invoice prices of the bids of the two companies, the report presents a tabulated statement from which the following totals are taken:

Total gallonage:		
Valve, engine and car oils	53,618	
Galena-Signal Oil Co. cost		$14,981
Union Petroleum Co. cost		6,702
Saving by Union Pet. Co.		$ 8,279

The report presents the case of the Louisville & Nashville Railroad Co. who made a contract with the New York Lubricating Oil Co. for the two years ending February, 1905, under which contract the railroad company paid the oil company $136,209 for lubricating oils used on rolling stock, a saving of $35,827 on the Galena-Signal Oil Co. bid. The New York Lubricating Oil Co. sought to renew this contract, and offered to lower the guaranty on the locomotive service from $1.69533 to $1.45, but was informed at the expiration of the contract that the busines would go to the Galena; and the contract was made with the Galena for a term of five years, during the first year of which contract, the report says, the Louisville & Nashville paid 90.7 per cent of the invoice price.

Statements by officials of the railroad are presented by the report showing that the quality of oil and the results obtained under the New York Lubricating Oil Co. contract were satisfactory. The company is still buying its signal oil and oil for lubricating other than rolling stock of the New York Lubricating Oil Co. The apparent reason for the contract with the Galena is shown by the report to be a consideration in return for freight given the road by the Galena-Signal Oil Co.

The Commissioner's report contains much other interesting data on the subject of lubricating oils.

VI.

TRANSPORTATION OF PETROLEUM.

Methods—Rates—Weights—Classification.

In an introductory paragraph in his report on the Transportation of Petroleum the Commissioner of Corporations says:

"The petroleum industry affords a striking example of the importance of the transportation problem. The cost of transportation is an exceedingly large factor in the cost of oil to the consumer. Consequently, any difference in transportation costs, as between different producers and refiners of oil, has a powerful influence upon their respective positions in competition. . . . Even an apparently slight difference in transportation rates may, therefore, enable one refiner to sell at a profit while his competitor is losing money."

The report of the Commissioner on the Transportation of Petroleum was the first of the series of reports on this industry submitted to the President, apparently for the reason that the transportation problem was the first essential in the Government investigation resulting in the rebate trials in the United States courts

against the Standard Oil Co. and the railroads. These matters are still in the courts; and for that reason even the statistical features of rebates and discriminations presented by the Commissioner will not be specially considered in this series of articles. There are sufficient interesting data in the report on transportation for the purpose of this article without touching upon features which the writer considers have passed beyond the domain of newspaper discussion.

So this article is devoted to such matters as concern methods and rates of transportation by rail and pipeline and water, the relation of the location of crude oil fields and refineries to the transportation conditions, comparisons of rates in relation to distances, and such like matters as are of interest to shippers of crude or refined petroleum.

Nor will the actual or presumed results of Government investigation and judicial inquiry be considered in this review, though it is not improbable that in another series of articles the past and present conditions of the petroleum industry may be taken up independent of the action of the Government.

Continuing the Commissioner's introductory remarks respecting the general conditions of oil transportation it is pertinent here to note his statement that: " it is safe to say that the average cost of transporting petroleum from the wells to the consumer of the finished product in this country far exceeds the cost of manufacture, and far exceeds a reasonable profit"; but it should be understood by the reader that this report of the Commissioner was published in May, 1906. In considering the transportation problem, the report says, it is necessary to take account of the movement of the oil all the way from the wells to the consumers of the finished product, which includes the subject of pipelines and which in itself is a large one that will receive full consideration in a future report.

Most of the crude oil produced in the United States, except in Texas, Louisiana and California, is refined before consumption, and is chiefly transported by pipelines; the refined products are seldom transported by pipeline, but reach their destination by rail and water. The crude oil in Texas, Louisiana and California being largely used for fuel in its natural state is collected by pipelines, but since it is to be distributed to numerous points of consumption the long distance transportation is chiefly by rail and water carriers.

While in the other fields pipelines are by State laws common carriers, the report says that there has been little attempt by the States to regulate their charges; and that the Federal Government has not yet exercised any control over pipelines engaged in interstate commerce; the result is that charges are excessive and in practice largely prohibitive.

In rail transportation tank cars are very largely used holding from about 24,000 to 80,000 pounds of oil, or from 80 to 250 barrels of 50 gallons; the rule of the railroads being to charge freight on the entire capacity of the car whether it is fully or only partly loaded. With the exception of two railroads, which handle chiefly California and Texas crude, railroads generally own very few tank cars. The Union Tank Line Co. (subsidiary of the Standard Oil Co.) owned in 1904 about 9000 tank cars, and other affiliated concerns, like the Waters-Pierce Oil Co., owned about 1000. Many of the Independents are fairly well supplied with their own tank cars.

For convenience the railroads universally fix arbitrary weights per gallon of petroleum transported in tank cars. In most parts of the United States this basis is 6.4 pounds alike for crude and all its liquid products. California crude, which is heavier than the crude of the Northeastern States, is carried on a basis of 7.75 pounds per gallon; Kansas and Texas, 7.4 pounds; in all parts of the country, except intrastate business in Kansas, all refined products is on the 6.4 pounds basis. There is, in fact, the report says, a material variety of weights of crude and refined products; gasoline ranging from 5.5 to 6 pounds per gallon; illuminating oil from 6.5 to 6.75; lubricating, fuel and gas oils from about 7 to 7.75; crude from 6.5 to 8.25; but the practice of uniform weights, the report says, is justifiable and satisfactory, and a great convenience to shippers and railroads.

Most, if not all, of the railroads of the United States arbitrarily fix the weight of a wooden barrel holding 50 to 54 gallons at 400 pounds, whether crude or refined is being shipped, the weight of empty wooden barrels is usually rated at 80 pounds, though 70 pounds is used on one or two important lines. The actual weight of a full barrel varies because of the difference in size of barrels, and more especially because of the difference in the specific gravity of the contents.

The weight of iron barrels, which are largely used on the Pacific Coast and in the Southern States, holding about 50 gallons, is fixed at 400 pounds usually, but in some sections at 385 pounds.

Tin cans of 5 gallons capacity are used chiefly in the mountain sections and the Pacific Coast States, and for export to tropical countries; they are rated at 80 pounds per case of 2 cans.

Freight rates are usually the same per 100 pounds in carloads, regardless of the method of shipment; but in the tank car shipments the weight of only the oil is charged for, while in shipments by other methods the weight of the container is also paid for.

Prior to the passage of the Interstate Commerce Act, in 1887, the report says, many railroad companies in the United States favored tank car shipments by charging lower rates per unit of weight quantity than for oil in barrels; sometimes expressed in cents per 100 pounds or per barrel, but in many cases at a certain price per car, regardless of weight. Even after the passage of this Act there was (in 1888) still some discrimination in favor of the tank car shipments, as shown in the following table:

Rates from Cleveland on Oil in Tank Cars and Barrels, in 1888.

	Rate per barrel		Equivalent per 100 lbs.	
	In tanks.	Boxcars.	In tanks 315 lbs. per bbl.	In boxcars 390 lbs. per bbl.
Cleveland to—	cents.	cents.	cents.	cents.
Chicago	38	50	12.06	12.82
Buffalo	25	34	7.94	8.72
Detroit	22	30	6.98	7.69
Grand Rapids	38	50	12.06	12.82
Kalamazoo	35	46	11.11	11.79
South Bend.	31.5	42	10.00	10.77
Elkhart (Ind.)	31.5	42	10.00	10.77
Erie	22	30	6.98	7.69

But the orders of the Interstate Commerce Commission were subsequently obeyed (by not only the railroads that had been complained of, but quite generally by railroads throughout the United States) to charge the same rates per 100 pounds on oil in tank cars and in barrels. At the present time, the report says, the railroads, with few exceptions, charge the same rate in tanks as in barrels, though the weight of the barrel is included in calculating the freight, under which arrangement the tank car shipper in many cases has the advantage, and he has the further advantage that all petroleum products in tank cars are taken at 320 pounds per barrel, while the barrel shipper must pay for 385 or 400 pounds, and in most cases the shipper must pay also for the return of the empty barrel, while in most parts of the country the empty tank car is returned free. So the report concludes that the barrel shipper pays about 50 more freight than the tank car shipper.

But, the report holds, it does not necessarily follow that the railroad company is under any obligation to forego freight charges on the weight of the barrel whether loaded or empty, for the barrel occupies space and increases the weight, so that from that standpoint alone the cost of transportation of oil in barrels is greater than the cost of transportating an equivalent quantity of oil in a tank car; and that this situation is not affected by the transportation of the weight of the tank car free for the owner.

In case the shipper owns the tank cars the railroad, except in California and on some Northwestern lines, now allow all shippers the same rate ¾ of 1 cent per mile on both loaded and empty cars, save that the transcontinental lines charge $105 per car for returning empty cylinder tank cars from the Pacific Coast to the East.

In view of the fact that the Bureau of Corporations will issue a separate report on California, and of the further fact that the alleged discriminations in favor of the Union Tank Line in this State are not within the present scope of this review, that subject will not be taken up in the present writing.

The movement of tank cars is slower than refrigerator cars; and railroad officials who often take quite a different position as to refrigerator cars, hold that it is more profitable to pay the mileage

to private tank car owners than to furnish the cars; due chiefly to the irregularity of demand for tank cars on any single railroad. Independent refiners generally state that the mileage payment brings only a moderate return on their investment, but they do not charge that the Standard's cars are moved enough faster to make the profits on their operation large.

Water transportation of petroleum in the domestic oil trade is mainly confined to coastwise movements, and the greater part of the oil thus shipped is handled in specially constructed tank vessels which ordinarily transport no other product; the cost is very much less than the rail charges, and probably not far different, in the case of coastwise movements, from the cost of pipeline transportation. The opening of the Texas and California fields has led to a very considerable coastwise movement of crude oil in tank steamers; refined oil is also shipped on the Atlantic and Pacific coasts in tank steamers and tank barges, the latter towed by ocean-going tugs; some of the regular coastwise steamers will not handle petroleum, on account of fire risk, and the steamers that do handle it charge rates much in excess of the cost of transportation in tank vessels. With the exception of movements from lower lake ports and from Chicago the water transportation of oil on the lakes and rivers of the United States is insignificant; but potential competition of water carriers is often made an excuse for low rail rates.

Three general classifications of freight (by rail) have been employed in the United States since 1887:

(a) Official classification applies to the Northeastern States, including the territory north of the Ohio and Potomac rivers and east of the Mississippi river.

(b) Southern classification applies south of the Ohio and Potomac and east of the Mississippi.

(c) Western classification applies to the remainder of the United States.

Each railroad is permitted to make exceptions to these classifications.

Under all classifications all petroleum products are assigned to the same class, with the exception of axel grease, paraffin, and a few other high-grade products not in liquid form. Usually where special commodity rates are applied on oils these also are uniform upon all grades and kinds of petroleum products. In Texas and California the rates on crude are usually much lower than on refined petroleum products, and in a few cases in States farther east the rates are lower on crude or fuel oil. Broadly speaking, however, says the report, the same rates are ordinarily used whether the oil is worth 1 cent or $1 per gallon; it being extremely difficult for railroad employes to determine the quality and the value of respective products by superficial inspection.

The table following shows the disposition of the leading oils under the several classifications and their approximate values per gallon and per carload; the refined petroleum products being based on the New York market quotations for products in barrels or other original packages, the crude oil in bulk at the wells, as published in the Oil, Paint and Drug Reporter of November 27, 1905:

Values and Classification of Petroleum and Various Oils.

Commodity and Grade.	Value Price per gal. (cents.)	Value per car 40,000 lbs.	Classification of carloads. (A)	(B)	(C)
Petroleum:					
Illuminating—120 S. W. jobbing lots	12.	$ 750	a	6	5
Crude—Pennsylvania	3.76	235	a	6	5
Crude—Kansas 32	1.24	67	a	6	5
Cottonseed oil—Best—Yellow Summer	30.	1600	5	6	5
Lard oil—Prime	60.	3200	5	5	5
Linseed oil—Raw	40.	2133	5	5	5
Peanut oil—White	55.	2933	5	6	5
Neatsfoot oil—30 deg. cold test	80.	4266	5	b3	5
Sperm oil—Natural winter	60.	3200	5	b3	5
Turpentine	64.	3657	5	6	5

A—Official; B—Southern; C—Western (classifications).
a—Special commodity.
b—Any quantity.

It is seen by the above table that the classification of petroleum and its products under the Southern and Western classifications is decidedly high, says the report, in proportion to their value.

Distance in relation to rates may and should be, under certain conditions, disregarded in the making of railroad rates, but the report holds that it is obviously a factor which should not be entirely ignored, rates are never made in direct proportion to distance; the longer the haul, under normal conditions, the lower the rate per mile; this principle should be constantly borne in mind in considering the comparisons of rates and distances presented in the report; it rests on two main grounds—first, the actual cost of handling the business is relatively greater on short than on long hauls, because the expense of originating and terminating the shipment and of the accounting in connection with it, which are often very important items, are usually about as great for a short haul as for a long one—in the second place, relatively lower rates must often be made for long hauls in order to move the business at all. As an illustration of this principle the following table shows for each 25 miles of distance the local fifth-class rates adopted by the Central Freight Association, including the railways in the territory north of the Ohio river from Buffalo and Pittsburg to Chicago and St. Louis; this table is not followed absolutely, but is intended to be applied to local business unless there is some special reason for departing from it; it will be seen that while the distance is multiplied by twenty the rate per 100 pounds is multiplied by about three.

Local Fifth-Class Rate Adopted by the Central Freight Association.

Distance. Miles.	Per 100 lbs. Cents.	Per ton per mile. Cents.
25	5.5	4.40
50	7.5	3.
75	8.	2.13
100	9.	1.80
125	10.	1.60
150	10.5	1.40
175	11.5	1.31
200	12.	1.20
225	13.	1.16
250	13.5	1.08
275	14.	1.02
300	14.5	.97
325	15.	.92
350	15.5	.89
375	16.5	.88
400	17.	.85
425	17.5	.82
450	18.	.80
475	18.	.76
500	18.	.72
525	18.	.69

In the report a diagram accompanies this table. Many other diagrams and maps are presented in the report, which with the tables and the text furnish an elaborate and exhaustive study of the transportation problem as applied to the movement of petroleum and its products.

In connection with the above table the reports says: "In comparing different rates on the basis of distance due regard must be given to differences in the volume of traffic. Rates are naturally higher in a sparsely popnlated territory, where general traffic is light than in a territory of dense population and heavy traffic. This principle does not mean, however, that the large shipper should be given a lower rate than the small shipper because of the large volume of business which he offers."

In reference to prorating (making of joint through rates) the report has a great deal to say, and shows that in several very important cases railroads and groups of railroads that prorate on almost all other articles have refused to prorate on oil, or have done so on oil coming from certain points, and observes that these arrangements with regard to prorating on oil are usually highly discriminatory. The report contains numerous tables showing discrimination in oil rates; but, as stated in the beginning of this article, the statistical matter in reference to these discriminations is omitted here, for the reason that the question of discrimination in oil rates is in the hands of the courts.

The term "transportation" employed as the heading of this article is used in a general way, and while it might also very properly include specific movements by pipeline, that particular method of transportation will, the writer holds, be more appropriately discussed under the heading of Distribution, which will include also tank wagon deliveries.

California Derrick

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SAN FRANCISCO, MAY 8, 1908

THE OIL LAND BILL

In the March number of the California Derrick (page 10) the opinion was expressed that the bill (H. R. 6255) providing for the disposal of lands chiefly valuable for oil and asphaltum, and introduced by Representative Smith of California, needed fixing. It was shown that should the bill as it then stood become a law the business of producing oil would fall into the hands of thousands of small operators and be reduced to a system of oil farming on a small and unprofitable scale, and without any measure of protection for the legitimate developer. Since then the editor of the California Derrick has had correspondence with prominent oil men of the Pacific Coast concurring in the views expressed in the Derrick.

It now develops that the House Committee on Public Lands, to whom the original bill was referred, realizing the unpopularity of the measure among oil men, and seeking advice in the Department of the Interior, had put the bill on a live wire operated by Secretary Garfield, who entertains positive and frequently pronounced views respecting the conservation of oil, coal, and kindred deposits on the public domain. When the bill came off the wire it was a bit disfigured, and carried the views of the Secretary of the Interior expressed in the form of suggested amendments. These amendments were accepted by the committee and incorporated in a substitute bill (H. R. 17827) offered in the place of the original bill and recommended for passage in the House.

In a letter under date of May 5th, to the California Derrick, Representative Smith stated that it was expected that the bill would soon be passed by the Senate, and become a law. The California Derrick appreciates the active work in behalf of the oil industry that Mr. Smith has been doing in Congress, and even though his original bill required fixing, it was initially through his persistent efforts that the Congress has been made acquainted with the requirements of the oil producers, and ultimately accomplished the passage of an acceptable bill.

The chief recommendations for amendment suggested by Secretary Garfield are here briefly stated.

A provision excluding from claims entered under the Act any known veins or lodes; but that the declarant who, in the course of his explorations, discovers a vein or lode of asphaltum shall have a preference right to locate and enter such vein.

That where the declaration covers land which contains valuable deposits of both oil and asphaltum increased payment should be required.

That location should be made according to the system of public land surveys.

In order to prevent the taking and holding of such lands for other than bona fide exploration purposes the bill was amended to provide that proceedings under the Act shall not give to the claimants, before patent is obtained, any right to the surface of such land for agricultural or grazing purposes; nor for any other purpose than that permitted by the Act; nor the right to fence or enclose the land.

Respecting the repeal of former laws the proviso is made by amendment that this Act shall not affect proceedings heretofore begun to acquire title under any of the provisions of the law so repealed.

The House Committee in its report recommending the passage of the amended, or substituted bill, briefly summarizes the following provisions of the bill:

The bill provides that land believed to contain mineral oil may be entered at the land office, much as a desert entry is now made, upon the payment of 25 cents per acre. Three years are allowed in which to finance the undertaking and sink the first well. The entryman does not acquire any right to the forage or timber growing on the land, except timber for domestic use while sinking his well—a privilege granted to all mineral and agricultural entries; nor does he get any veins or lodes of mineral wealth discovered on the land by virtue of the oil entry.

An annual payment to the Government of 50 cents per acre or an equal expenditure in sinking for oil is required, and this provision taken in connection with the one withholding the fruits of the surface will, it is believed, prevent the entry or holding of lands under this Act except for the purpose of discovering and producing oil.

Secretary Garfield's quick perception of the needs of the oil producers and the conditions obtaining in the mining industry have been acquired by a persistency of effort that not all Cabinet officers have been guilty of. He got busy immediately upon entering the Interior Department, and carried into that department the same spirit of hard work that marked his inauguration of the Bureau of Corporations in the Department of Commerce and Labor. When Mr. Garfield swung round the country last summer, making brief visits at important points, he was accused by the newspapers of doing politics; but the industries of the country having relations with the Interior Department soon discovered that there was somebody on the job, as the various bureaus in the department had previously learned, who was doing something more important than politics.

BUREAU OF GEOLOGICAL SURVEY AND MINING TECHNOLOGY.

It is the opinion of the California Derrick that the work of the Geological Survey should be expanded to meet the requirements of the mining industry, and the control and direction should be retained under the one head. The chief reason for the past lack of expansion of the technological work has been the lack of funds. So, instead of creating a new Bureau, with a new director at a salary of $6,000 a year, and additional clerks essential to the establishment and maintenance of a new Bureau, this money should be employed in a direct and beneficial way. Change the name, if you will, and call it the Bureau of Geological Survey and Mining Technology, and make Mr. George Otis Smith the responsible head of the whole business. There are too many heads in Washington now; there should be a few more tails in the field if the mining industry is to be benefited.

Under date of May 6th, advices from Washington to the California Derrick say that the present status of the movement for an independent bureau is not altogether certain. In the Senate the joint resolution approved by the Secretary of the Interior and introduced by Senator Dick, is on the calander, but there is little expectation of its passage. Senator Hemenway has introduced in the Senate a bill providing for an independent bureau of mining technology, practically along the lines of an earlier bill approved by Secretary Garfield and introduced by Senator Dick. The same bill has been introduced in the House by Representative Chaney, and was considered by the House Committee on Mines and Mining, which reported a bill (H. R. 20883) now on the House calender. The provisions of this bill were briefly outlined in the California Derrick in the April number, page 26. But this bill does not clearly distinguish between the work of the proposed new bureau and the similar work in progress in the Geological Survey. Director Smith and most of the friends of the proposed bureau are anxious to have this distinction clearly demarked, and for that reason favor the title, "Mining Technology."

In the opinion of the California Derrick the present important and imperative thing in this effort to add to the Government investigations of the mining industry is the provision for the inauguration of the investigations respecting the prevention of mine accidents, and the appropriation of $195,000 for that work. In this expression the Derrick voices the sentiment of Director Smith, and Representative Wilson of Pennsylvania, and in all probability also the sentiment of Representative Englebright, chairman of the House committee reporting the bill. It makes no difference whether this work may initially be done by the Geological Survey or by the new bureau; it should not be delayed, even if the Congress cannot agree in the present session on the other features of the bill. Should the work be undertaken by the Survey this and such other work as may properly belong to the new bureau can, and it will be, promptly transferred. The editors of the California Derrick have the fullest confidence that the Geological Survey will act promptly in this matter. The same confidence obtains among the oil men of the Pacific Coast, and no doubt among the oil men of all other oil producing sections; and there is no doubt that Director Smith has faith in this confidence of the oil and the hard mineral miners all over the country. But he is pronounced in the expression of his anxiety to have the new bureau authorized in terms that will leave no doubt as to the respective functions of the two bureaus, which he maintains should co-operate in working for the benefit of the mining industry.

Now a word respecting a feature of the work that is of vital interest to every branch of the mining industry—the collection and publicity of statistical information. There is no reason why adequate provision should not be made for the extension of this feature of the work to meet all the requirements of every branch of the mining industry, oil, coal, structural materials, industrial metals, precious minerals, water resources, etc. These statistics should be ample, accurate and comprehensive, and should be available through regular and frequent publicity from one, and only one, source. It does not matter whether there shall be created a new bureau, or the work of the present Geological Survey be extended, so far as this branch of the work is concerned. The operators and investors in the mining world are busy people. They want concise and useful information regarding the metals and materials obtained by the operation of the mining industry, from the grass roots of the work to the finished product. And they want to know the exact source of the publicity of such information. In the present arrangement of the various bureaus at Washington the oil man and the miner, the builder and the manufacturer who seek mining statistics would require a "blue book" as big as a Bible to enable them to ascertain the source of the information desired.

In about November, 1907, there was issued by the Bureau of the Census, Division of Manufactures, in the Department of Commerce and Labor, Bulletin No. 70, on Petroleum Refining for the year 1905. It is an interesting and valuable work prepared by Mr. Charles E. Munroe, Expert Special Agent. But it is two years out of date and no more belongs in the manufactures division of the Census Bureau of the Department of Commerce and Labor than the cyaniding of gold ores belongs in the division of rutabagas in the Department of Agriculture. The production of refined oil, like the production of black copper, and the milling of gold ores into bullion, and the minting of gold money, is a part of the mining industry. There is a difference between production and manufacture that does not require a university education to discover. These data and statistics should issue from the Geological Survey or the new Bureau of Mining Technology. When such products are placed on the market they become a part of the commerce of the country, but in the process of production they are neither a part of the commerce nor of the manufactures.

Another thing of importance is the regularity and frequency of publicity. The law of the creation of the new bureau or the extension of the work of the Geological Survey should provide for ample funds and be explicit in directions as to this branch of the work. The present bill provides that the Secretary of the Interior shall direct the publicity. Anyone who has followed the career of Secretary Garfield through his work in the Bureau of Corporations and the Interior Department will know that this branch of the work will not be neglected so long as he is provided with the necessary funds. Mr. Garfield will not be forever and always the Secretary of the Interior, for he is a man of honorable ambition and prompt activity. The matter of publicity should be more clearly defined by the law of creation of this new bureau, for next to the economic geologic work and the humane provision for the protection of life, the collection and publication of statistical information is the important feature of the undertaking.

WORK OF THE GEOLOGICAL SURVEY.

For ten years or more there has been an insistent demand from mining States, particularly in the West, for more extensive recognition of the mining industry by the Government in its investigations. The United States Geological Survey, authorized by Congress in 1879, and now a division of the Department of the Interior, has done, and is at present doing, valuable work that has not been recognized for its full worth by others than the mining engineer and the prospector, until within the past two or three years. The organic law provides that the Director of the Geological Survey shall have the direction of the survey and the classification of public lands, and the examination of the geological structure, mineral resources and products of the national domain. Mr. Clarence King, the first appointed director, regarded the law in the fullness of his own construction of it, and proposed to study mining and metallurgical methods, in addition to the investigations of a purely geological character. In the summary of his first report Mr. King provided for thirteen publications based on investigations that he had made. Ten of these publications were to be devoted to the subjects of applied geology and technology. But the Congress would not give Mr. King sufficient funds to carry out this work. Major Powell, succeeding Mr. King, was thus forewarned, and established as his policy the plan of carrying on the fundamental geological work which he considered as absolutely essential as a preliminary to the solving of the problems connected with economic geology. Major Powell also organized a division of statistics and technology; but in this effort he was met by the same obstacle that confronted his predecessor—a lack of funds.

In 1894 Director Walcott, realizing the immediate requirements of the mining interests, considered the undertaking of investigations of nearly all the phases of mineral resources of the country, but without curtailing the study of geologic problems. Mr. Walcott went back to Clarence King's original plan of employing expert economic geologists to supervise the collection of statistics. As a result of Mr. Walcott's practical initiative, and of the active and persistent effort of the present Director of the Geological Survey, Mr. George Otis Smith, the statistical work of the Survey is now on a broad plane which attracts attention and compels quotation, both in this country and abroad. But the work of the Geological Survey, as its name indicates, has been devoted chiefly to the study of geological conditions and problems, which is essentially the basis of the publications of annual and other reports of mineral production and geological problems.

But the technologic studies of mineral products have been practically limited to the investigation of the utilization of mineral fuels and building materials. The investigations relating to mining have all very properly been approached from a scientific standpoint. In the present organization of the Geological Survey two divisions of the geological branch and one of the technologic branch are devoted exclusively to the mining industry, and the industry is indirectly aided through the work of the water resources branch and the structural materials division of the technologic branch.

Such facts as are here stated, and other and fuller rehearsal of the work of the Geological Survey, were submitted by Director Smith to the Secretary of the Interior on January 7, 1907, upon request of the Senate Committee on Mines and Mining; and in turn this information was transmitted by Secretary Garfield to the committee. Director Smith's letter contained his own views as to the character of the new work that should be done, and which he summarized in the expression that "the whole question resolves itself into that of making adequate provision for the work now conducted by the technologic branch of the Geological Survey." In the opinion of the California Derrick, that is all there is to it.

Reported by

Special Field Representatives

of the

California Derrick

COALINGA

The neatly painted street signs that greet the citizens of Coalinga at every street corner suggest city airs and are a great convenience to stranger and citizen alike. With the present outlook of field and town for business, with 305 school children in the city school, with the postoffice business increasing, the telephone people quietly but surely preparing for a "Greater Coalinga," the people should not be blind to the growing necessity for a sewer system. Some enterprising men will come and develop the natural gas in this field. Men will soon be found that will establish a small refinery to furnish the large demand for distilate required in this field. There is now a field operated 16 miles north of town; there are several companies operating south as far as 35 miles; and all are drawing supplies from this common center. If this progress and extension of the field, which means a steady growth of the town, is to be encouraged a sewer must be constructed and the health of the people invited to this field be protected, or this new population will go to some other town.

R. Koster, representing the Baker Iron Works, of Los Angeles, made a sale of 15,000 feet of 4-inch rivited pipe to the Pleasant Valley Water Company. This line will be the main line from the West Coalinga Oil Company's water well, section 12-21-14. Immediately delivery is promised, and the water company will lose no time in laying the pipe.

The Associated Oil Company is having a large shipping tank built, 37,500 barrels, on section 8-21-15, upon an elevation allowing the oil to gravitate to their loading rack on the same section. The Bunting Iron Works are the builders. Joe. J. Long, manager of the boiler department of the Bunting Iron Works, has a gang of 20 men to go on the work.

The Standard Oil Company, Peachtree district, Monterey county, has purchased two more strings of drilling tools from the Bunting Iron Works; this makes seven strings of tools sold the Standard Oil Company for the Peachtree district. The indications point to something doing about Peachtree. Alex. Works is managing the development work.

The shops, boiler plant and foundry of the Bunting Iron Works are running full time, employing about 70 men, repairing oil well tools and boilers, and making new tools. A very busy plant and a great assistance to this field.

Jno. A. Bunting and son made the run in his auto car from Centerville, Alameda county, to Coalinga in nine hours. Mr. Bunting is an expert chauffeur and takes great pleasure in handling his car both in busy San Francisco and over the hills.

The Coalinga Light & Power Company has received a carload of poles to extend the electeic light system about the town and the field. The growth of the business has been very encouraging the past year.

The Coalinga Oil & Transportation Company has had stations No. 6, No. 7 and No. 8 overhauled; these stations are over towards King City. The boilers have been repaired by a crew from the Bunting Iron Works. The transportation company appears to be satisned with the experienced men here who know the needs of this kind of work.

J. J. Long, manager of the boiler works of the Bunting Iron Works, returned from a business trip to Los Angeles last Wednesday.

The Devils Den Consolidated Oil Company, section 22-25-18, William Lindemann of Hanford, field manager, is hauling casing and supplies from Coalinga. The drillers left here last Thursday for the property. The company will undertake to finish the well started by Smith & Bryner. The new company, composed of Visalia men, recently acquired this property. This company is located about 35 miles, air line, from Coalinga, and south of the El Cerrito Oil Company.

One of the most interesting indications of Coalinga's growth, from a struggling nest on the plains, is the business done at the local postoffice for the past year. The receipts of the office for the year ending March 31, 1907, for the sale of stamps, envelopes, etc., amounted to $5,409.32. For the year ending March 31, 1908, from the same sources, amounted to the neat sum of $8,531.61, a gain for the year of $3,122.29. The money order business last week reached a little over $4,000. This places the Coalinga office in the second class. The advance has been steady, a noticeable gain each quarter. The courtesy shown all who have business with the office has made the postmistress very popular.

The Inca Oil Company, section 24-20-14, has 18 wells producing; three wells drilling, two of which are about 1,000 feet deep and in the oil sand; one well about completed; material on the ground for four more rigs; two 70-horsepower boilers are set up, and foundation made for two more—these are situated in the center of the property. Contractor Macy has completed the cottage for the bookkeeper, and has a cottage about finished for the production foreman. The company has the plans for a combination warehouse and office, which will soon be built.

The Confidence Oil Company, section 31-19-15, has redrilled well No. 13, situated about the middle of their lease near the Maine State cook-house. The pipe has been perforated and the well is being bailed. Mr. Claery, superintendent, reports the well doing nicely.

The S. W. & B. Oil Company, section 6-20-15, is redrilling well No. 1. Well No. 4 is making about 250 barrels per day. Superintendent Bud King should have four producing wells by June 1, 1908.

The Wabash Oil Company, section 24-26-14, is drilling on wells No. 12 and No. 17, running two strings of tools. Derrick and rig for well No. 16 will be completed this week.

The California & New York Oil Companies, section 12-20-14 (P. M. D. & O. lease) are cleaning out well No. 2. Wells No. 1, No. 3 and No. 4 are producing very satisfactorily.

The Imperial Oil Company (Coalinga division), section 2-19-15, has material on the ground for two more rigs. They will run four strings of tools as soon as these rigs are completed.

J. M. Wright, section 28-18-15, is casing; has in about 550 feet of pipe. The ground is cavey and must be handled with care. Much interest is centered in this well, the fartherest to the north.

The Sauer Dough Oil Company, section 22-19-15, is drilling in wells No. 8 and No. 9. The derrick and rig for well No. 10 is completed. With this well drilled the lease will be drilled.

The California Monarch Oil Co., section 26-19-15, is cleaning out well No. 1. Also, on section 31-19-15, is cleaning out well No. 4.

The Caribou Oil Mining Company, section 22-19-15, will soon have well No. 15 completed; the derrick and rig for well No. 16 has been completed and will rig up next week.

The T. C. Oil Company (Graham), section 2-19-15, has rig completed for well No. 2, Johnson lease.

The Fresno-San Francisco Oil Company, section 1-20-14, has four producing wells; material on the ground for rig No. 5.

Chas. G. Wilcox well No. 1, on section 2-19-15, is 800 feet deep with $12\frac{1}{2}$-inch casing.

SOUTHERN FIELDS.

The fields in the southern part of the State are sharing with those in the north in the general revival and the same intense activity in field work is noticeable which has characterized this part of the industry for a year past.

Owing to the immense increase in production in some of the southern fields, particularly the Salt Lake district, the market here is a little long on oil, and as a result prices have been somewhat depressed during the past two weeks. The local markets can take care of about 350,00 0barrels a month, and at present the output is probably about 100,000 or 150,000 barrels in excess of that. Of course, the railroads take immense quantities of southern oil at present, but even with this there is a small over-production, and consequently more competition in the markets.

Another contributory cause for a decline in price—and, in fact, the principal cause—is found in the fact that the individual producers have never "got together" as they have in the Kern River field, and there are scores of them marketing their own oil. Individually their several outputs do not amount to much, but collectively to considerable. Hundreds of the consumers in this district are users of only moderate amounts of fuel, so they can be supplied by individual producers.

Again, both the Union Oil Company and the Associated are apparently after this southern market. Both have very large productions of their own, and it is fair to assume that neither will leave the field to the other unless forced to do so. It looks as if there might be a fight unless they, too, "get together." But as an indication that the large concerns are not the ones responsible for bearing the market, it might be said that recently when the country

was placing contracts for 50,000 barrels of oil it developed that one independent producer put in a bid of 68 cents, whereas, both the Union and the Associated bid 85 cents.

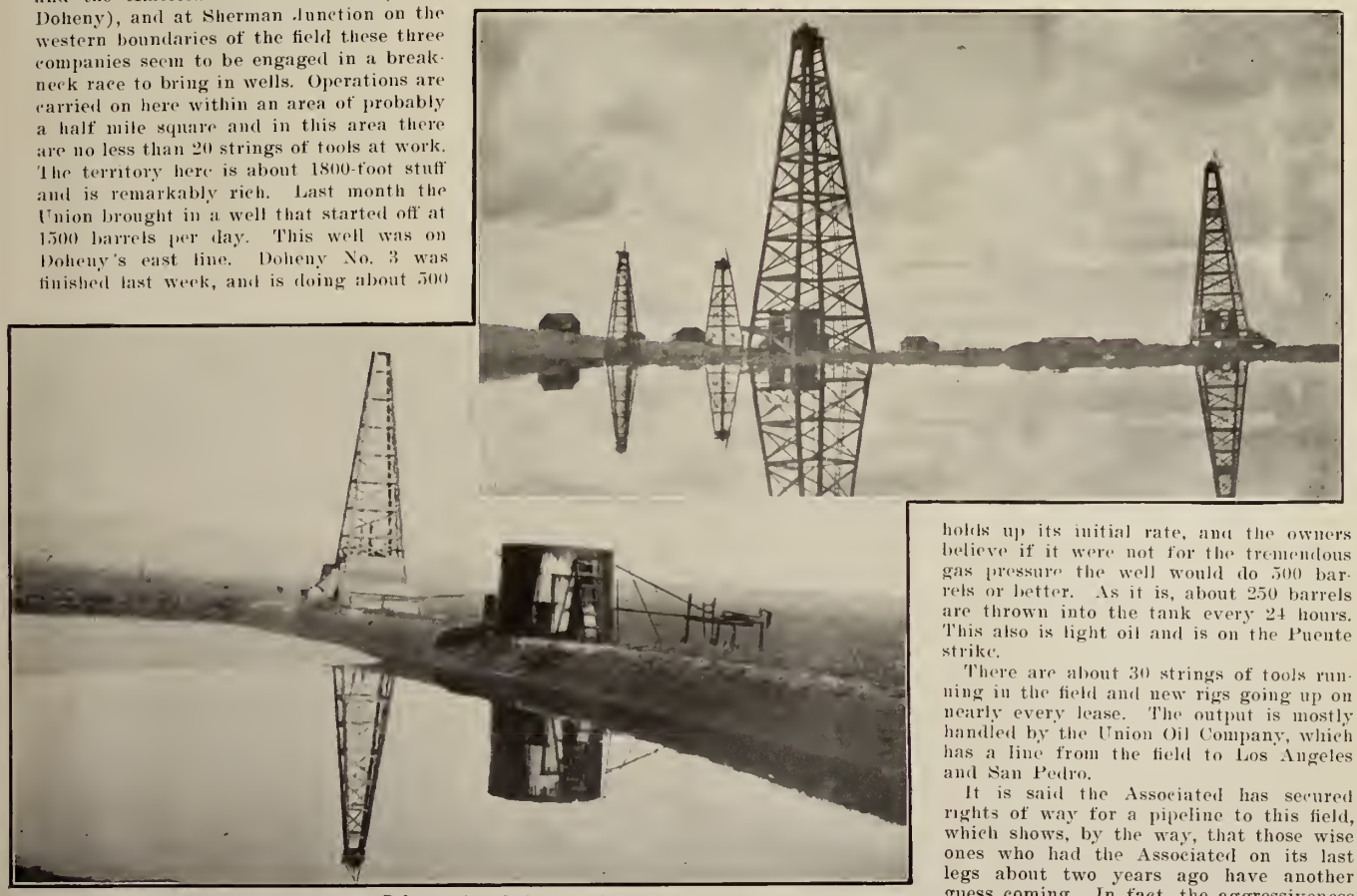
So, instead of uniting and permitting one of the large marketing concerns to handle their oil, the independents are cutting each other's throats and receiving much less for their oil than they are entitled to.

However, this little slump is no doubt only temporarily, and is done, as is seen, to local conditions entirely. The demand throughout the entire State exceeds the output by several thousands barrels per day, and matters in the south will adjust themselves in time.

Salt Lake Field.

The greatest excitement seems to prevail in connection with the Salt Lake field, and some wild talk is indulged in as to the extent and possible output. Wild as it is, there is some reason in the talk, too. As a matter of fact, every well that is drilled increases the extent of the productive area and also increases the output for the time being from 500 to 1000 barrels per day.

There are probably 35 strings of tools running in the field, the largest operators being the Associated (Amalgamated), the Union and the American Petroleum Co. (E. L. Doheny), and at Sherman Junction on the western boundaries of the field these three companies seem to be engaged in a break-neck race to bring in wells. Operations are carried on here within an area of probably a half mile square and in this area there are no less than 20 strings of tools at work. The territory here is about 1800-foot stuff and is remarkably rich. Last month the Union brought in a well that started off at 1500 barrels per day. This well was on Doheny's east line. Doheny No. 3 was finished last week, and is doing about 500 barrels. The McDor Oil Company (McCray Bros.), T. A. O'Donnell et al.), which is somewhat in advance of the above group, struck the sand in No. 1 last week at 1750 feet, and it is showing up for a fine producer. Oil is also reported to have been found in the Associated well on the Wolfskill ranch about one mile west of the McDor No. 1.



Reflections from Coalinga and Kern River

There are test holes being drilled all the way from here to Sawtelle, a distance of six miles, and every foot of land has been bought or leased along the entire south slope of the Santa Monica range nearly to the ocean. The Associated, especially, among the large concerns seems to have all kinds of faith in this territory, and is picking it up wherever it can get it, and is paying what might be called a fancy price for some of it.

The field seems destined to become, and indeed is at present, one of the big fields of the State. It has not reached its limits yet in either area or production. The present output is about 13,000 barrels per day, but it would occasion no surprise if in the course of six months it should be increased to 20,000 barrels.

The old city field is still putting out about 50,000 barrels per month, having been increased by cleaning out and deepening in some instances.

Fullerton Field.

"As busy as a cranberry merchant at Christmas time" about describes conditions in the Fullerton field. There is no letup in field activity except on the property of the Santa Fe, where operations have been suspended on all work except the finishing of several wells which have been under way for some time. It is said no more wells will be drilled on this property for the present, as the company is devoting its energies to its Midway holdings, where it expects to secure a large share of its fuel in the future.

Several good wells have been completed in the Fullerton field during the past month, and the output has been substantially increased. Graham-Loftus Oil Company has finished one well on its light oil belt, which is a "dandy." It was finished at 3200 feet (one of the deepest holes in the field), and the product is about 36 gravity, very desirable for refining. It is flowing at about a 600-barrel gait. The Columbia Oil Company also has finished a 300-barrel well, and the Union has completed one which started off at 800 barrels.

The well of the Orange Oil Company, west of Brea Canyon, still holds up its initial rate, and the owners believe if it were not for the tremendous gas pressure the well would do 500 barrels or better. As it is, about 250 barrels are thrown into the tank every 24 hours. This also is light oil and is on the Puente strike.

There are about 30 strings of tools running in the field and new rigs going up on nearly every lease. The output is mostly handled by the Union Oil Company, which has a line from the field to Los Angeles and San Pedro.

It is said the Associated has secured rights of way for a pipeline to this field, which shows, by the way, that those wise ones who had the Associated on its last legs about two years ago have another guess coming. In fact, the aggressiveness of the Associated is one of the important features of the business in the southern part of the State. It will, however, be a difficult matter to secure a foothold in Fullerton, as the Union has most of the oil under contract. It is all taken care of and none is being stored.

Whittier Field.

Nothing startling has developed in the Whittier field during the past month. The territory is pretty well defined and the only work going on is by the established companies.

Some little interest was created in the field by a strike made by the Central Oil Company recently, which seems to have uncovered another stratum. The location is about three-quarters of a mile northeast from the first well drilled on the property. The hole is nearly 3000 feet deep, and the product is about 32 gravity. There is an immense gas pressure; so heavy, in fact, that it seems to hold the oil back, but it is believed that when this is got under control the well will make a fine producer—probably the largest in the field. This opens up quite a scope of territory, but will affect no one except the Central Oil Co., whose property will, of course, be enhanced in value by that much.

The Murphy Oil Company's No. 4 in the Coyote hills, which is considered an extension of the Whittier field, is in a fair way to be lost to the owners owing to an immense flow of water which it seems impossible to control. The hole is down 1600 feet and the water flow is so copious that it prevents the drillers from working. In this pool the Murphy Oil Company is, so far, the only successful operator, although the Union is drilling near the Murphy line.

There are about ten strings of tools running in the Whittier field, four of which are operated by the Central Oil Company. The present output is about 75,000 barrels per month, and it is all marketed as rapidly as produced, the price ranging from 75 cents to 90 cents.

KERN COUNTY.

Kern River.

The production of the Kern River fields for the last month is somewhat in excess of the preceding month: this was on account of the new wells brought in. While the field will not admit of a great increase in production, the new wells brought in and old ones cleaned out and started to pumping, have materially increased the total production. The greater port of such increase has come from the extreme western and northern parts of the field, many old wells which have not been pumping for several years have been cleaned out and put on the beam.

Wells four or five years ago doing 25 or 30 barrels per day were not worth the pumping, the product not being sufficient to pay the expense of running, but 60-cent oil makes wells of this capacity profitable to operate, and new wells are being drilled where the production is not expected to exceed 40 or 50 barrels per day to the well. When it is considered that a 50-barrel well now brings in more money than a 150-barrel well four years ago, it may readily be seen there is reason behind the extraordinary cleaning out and rehabilitating of old properties now going on in this field.

The old Vanderlip property on the eastern edge of section 25 has again entered the field of active properties, this property has been leased to Fox & Garret and has one well cleaned out and producing and another in the process of making ready for pumping. These two wells were drilled in over three years ago and never delivered a barrel of production to any of the marketing companies until the present price induced the present operators to lease the property and produce. The present production is in the hands of the Independent Producers Agency.

The Emerald Oil Company is another old-timer under a new name and in the same section on the extreme eastern edge. This property was formerly the old S. P. Oil Company, and shared the Vanderlip's honor of never delivering a barrel of oil until the present year. The Emerald Oil Company is composed of Bakersfield people, and has three wells in operation and the derrick up for the next new well. The production is in the hands of the Independent Agency, while the Associated Oil Company has just completed a line to the property, and oil is being delivered through the Independent Agency to the Associated.

The Akron Oil Company is the old Clark Oil Company in the extreme southwest quarter of section 20. This company is busily engaged in putting the two wells on the property in shape to deliver oil to the Independent Agency, with which it has contracted for its oil.

The Bald Eagle Oil Company, on section 30, is installing a new boiler plant and has a pipeline completed to the property for the delivery of oil. One string of tools is running on this property.

The M. & S. Oil Company, on section 29, has three wells completed and one string of tools running on the property.

The Sacramento Oil Company on the same section has two new derricks up for new work. The advance in price on the contract this company had with the Associated Oil Company will doubtless induce further development of some of the property, of which a great deal is undrilled. The advance in price (from the newspaper accounts of the contract) about split the difference between the price contracted at and the price the Associated is now paying the Independent Producers.

The Sessnon Oil Company, on section 29, has three wells completed and rigs up for two more, and is just completing the installment of a boiler plant of 370 horsepower.

The Jastro & St. Clair property, on section 6, has a rig up for another well on this property, the first well brought in showing such good results that the company has commenced to prosecute the work of further development.

Both the Four and Apollo Oil companies, which succeeded in raising their contract price with the Associated Oil Company, are installing new boiler power with the intention of further developing their property at the advanced price of oil.

There are between 30 and 35 strings of tools running on new work in the field. The daily production is slightly above 30,000 barrels daily, practically all of which is shipped for daily consumption and a very little percentage going into permanent storage.

The completion of the Associated Pipeline Company's line to San Francisco, which is now being tested and will, in a short time, commence delivering oil, will let loose a great number of tank cars which the operators on the west side, Sunset and McKittrick hope will give them increased shipping facilities.

Sunset-Midway.

The increase of business at Sunset (or Maricopa) continues to grow. More wells are drilling in this field than at any time in its history; more oil being shipped daily than any time since the Sunset field commenced operations, over eight years ago.

Several miles of grading on the extension of the Sunset road to Midway have been completed, and during the summer trains will be running direct to the Midway. The extension of this road will mean an enormous economy to the Midway operators in their teaming bills and also convenience in having the railroad close to their properties.

The Western Consolidated Oil Company, on section 7, directly east of Maricopa, is progressing slowly, but surely, at a depth of over 1000 feet.

The southeast quarter of section 1 has been leased, and work by the companies to develop the same will commence shortly. The new wells of the Fulton Oil Company are being drilled on their extreme eastern edge and will parallel the line of the new companies on the west edge of the property.

The Ruby Oil Company, on the extreme northeast edge of section 2, has its first well nearing completion and has the rig up for the second well.

The Adline Oil Company is drilling one new well on its property; also, the Maricopa Road Oil Company is drilling a new one.

The Gate City Oil Company has commenced drilling on the fourth well on the property.

The Monte Cristo Oil Company has four strings running on the different properties bought and commenced development work in the Sunset and Midway fields.

The Sunset Road Oil Company continues the extensive development work commenced during the latter part of the year 1907.

The New Center Oil Company is busy drilling a new well on its northern line and installing additional boiler power for new development work.

One of the most unsatisfactory conditions imaginable in this field is the overworked condition of the one train to Sunset. With more freight business than one crew can handle, the railroad continues to give the Sunset and Midway districts the worst train service on earth. The running of a single train to this field, with the enormous amount of business that is done, is an imposition that none but the most patient and long-suffering class of people in the world—namely, oil operators—would submit to.

Under the present conditions it is imperative for anyone who has business to transact, either in going to or coming from the fields, to hire an automobile in order to get half a day's business done in less than three days, which it necessitates when depending on the train service.

Shipments from Sunset have been averaging close to 5000 barrels daily for the last month, not including oil going to the Standard pipeline, which runs from 40,000 to 60,000 barrels per month.

Many new buildings are being completed at Maricopa, and the place is rapidly assuming the looks of an exceeding busy oil field.

In the Midway field section 25 has just completed one well and commenced drilling on the new well, for which the derrick has been completed.

The Crescens Oil Company is drilling on one new well.

The Mount Diablo Oil Company has not as yet finished the first well.

The Mascot Oil Company has two strings of tools running on the 160-acre lease.

The Safe Oil Company has commenced operations on a well in an endeavor to deepen the well and reach the oil sand found in section 25 and also in that of the Tulare Oil Company, which it expects to strike at about 1700 feet.

The Know Hill Oil Company is still at work on the well in section 23. The chance of not getting a good well in this territory is very slight.

The Brocton Oil Company has shut down for a short time, pending the shutting off of water in the well.

The Arminta Oil Company continues to prosecute drilling as fast as the formation and nature of the ground permit.

The Mountain Girl Oil Company brought in a new well within the last few weeks which produces better than any of the men familiar with the Midway territory expected in the western part of the proven field. This well is doing beween 200 and 300 barrels daily and extends the scope of sure territory west. Little by little the Midway is being extended until, if present indications keep up, it will rival in extent of proven territory any of the oil fields in the State.

In the southern part of section 31 the Midway Crude Oil Company has material on the ground for a new well, which, when completed, if successful, will extend the proven territory still farther north of the Chanslor-Canfield Midway property on section 6.

J. A. Stroud, on section 15, is nearing a depth of 1000 feet on his well, which is some distance from any well producing oil.

In the Midway proper there are about 25 strings of tools on new wells, and derricks completed (including those of the Chanslor-Canfield Midway properties) for 50 more new wells in this district.

The McKittrick field is still on the increase. More new work is being done in this field than at any time during its history. McKit-

trick's shipment of oil is averaging nearly 200,000 barrels per month, which is more than it has ever shipped.

The Associated Oil Company has brought in a good well on section 3, in the north end, which extends the field still further north and west. The Everett Oil Company will drill on part of this section, and now has the material on the ground for the first well.

The State Oil Company has recently completed the first well which has a good production. The W. & S. Oil Company, on the flat, has brought in a well which heretofore has been thought to be dry territory. Time may show a vast amount of country which was condemned in the early days as practically worthless to be first-class oil land. Every new well brought in is, in nearly every case, on ground that six years ago had been abandoned as worth little or nothing for oil land.

The development on the Temblor district has not yet reached such a state as to give any assurance whether the field has been extended to there or not. With the completion or abandoning of several wells now drilling in that part of the field, more definite knowledge of its future will be known.

About 20 strings of tools are running in the McKittrick district proper, and 20 or 25 new derricks are up for wells to be worked on as soon as those under way have been completed.

SANTA MARIA.

Recently the daily papers have been reporting as news the contract between the Standard Oil Company and the Union Oil Company for all the way from 1,000,000 to 2,000,000 barrels of oil. The facts of the case are, that this contract was made two months ago for 1,000,000 barrels per year for two years. The price paid by the Standard was about $1 a barrel delivered at Port Harford from the Union Oil Company's pipeline coming from the Santa Maria field. And, while this price is apparently a very high one for crude oil, it is actually much cheaper than the 50c to 60c 15 gravity oil sold in the San Joaquin Valley fields along the line of the railroad and available only for fuel purposes.

The oil production of the Union Oil Company keeps up well; the new wells on its Newlove ranch and the Union's "Monarch of the Field" (Squiers No. 10) more than make good the natural shortages in other locations. There is a new lot of rigs in the northern part of the Newlove, and others going up towards the west end, near the big gusher.

EASTERN MONTEREY.

The Standard is buying large tracts of land in Eastern Monterey and putting down wells in the district east of King City.

From a well over 1500 feet, now drilling in Lone Oak by the Herron brothers, it is evident that this is going to be a deep field. It will probably require a year of drilling before any appreciable production comes in from Eastern Monterey wells. And there is no certainty as to the probable amount of production of these wells. The oil will undoubtedly be light gravity, as the seepages indicate.

LATEST OIL STOCK REPORTS.

San Francisco Quotations.

Following are the latest quotations for California oil stocks listed on the California Stock and Oil Exchange:

	Bid.	Asked.		Bid.	Asked.
Alma	...	1.00	Monte Cristo	.50	.66
Amalgamated Oil	50.00	70.00	Nevada County	.40	.60
Assoc. Oil Tr. Cer.	29.00	29.50	Occidental	.05	.12
Brookshire	1.50	1.75	Peerless	3.00	3.50
Caribou	10.50	15.00	Piedmont	.22	.23
Chicago Crude	.05	.07	Radium	....	.50
Claremont	1.00	1.05	Rice Ranch	....	1.00
Esperanza	1.00	...	S. F. & McKittrick	11.00	12.00
Fonr	.11	.20	Shawmut	....	1.00
Fulton	1.70	1.75	Sauer Dough	1.00	2.00
Home	.22	...	Sovereign	....	.19
Illinois Crude	.05	...	Sterling	2.50	2.75
Imperial	19.50	27.00	Sunset Monarch	.28	....
Independence	.23	...	Superior	.11	....
Junction	.37	.45	Thirty-Three	....	4.00
Kern	.10	...	Union	225.00	230.00
Kern River	...	7.50	Wabash	1.10	....
Linda Vista	.21	...	Wolverine	.30	.50
McKittrick	.20	.22	Western Union	....	100.00

Los Angeles Quotations.

Following are the latest quotations for oil stocks listed on the Los Angeles Stock Exchange:

	Bid.	Asked.		Bid.	Asked.
Amalg. Oil	62.25	70.00	New Pa. Pet. Co.	.70	.90
Assoc. Oil	29.37½	29.87½	Pinal Oil Co.	....	17.00
Brookshire Oil	1.50	1.85	Olinda Oil Co.	.09	.11¾
Central	.85	.95	Pirn Oil & L. Co.	.06	....
Columbia	.70	.90	Reed Crude	.16½	.20
Continental	.17	.25	Rice R. Oil Co.	.65	1.20
Elk Con. Oil Co.	.05	.08	Union	230.00	238.00
Fullerton Oil	.42	.70	Union Prov. Co.	227.00	237.00
Globe	.12⅛	.13½	United Pet.	380.00	450.00
Mexican Pet.	1.25	1.40	Western Union	90.00	110.00

OIL MARKET ABROAD.

Russian Position.

The total production from all the fields of Baku for March amounted to 38,318,393 poods. From the Bibi-Eybat field 10,767,129 poods were obtained, and of the Bibi-Eybat production 704,930 poods were the result of fountain production. No fountain production was derived from any other source during the month. Compared with the February production, and allowing for the longer duration of the mouth, there is a slight increase in the production for March.

At Lianosoff's factory a strike has broken out, but on the oil fields the position is much quieter, and except for the fact that the workmen of Misoew have not yet returned, all trouble is at an end for the time being.

The Volga navigation has now commenced; the season was late in starting this year, owing to the continuance of ice both in the river and out at sea. Now that the river is navigable, however, the vessels of many of the shippers have left for Astrakhan, from whence they will deliver oil to the various ports on the Volga and its tributaries.

As regards prices, there has been a steady decline for the whole of the month. At the time of our last report Crude Petroleum for prompt delivery was quoted at 27½ copecks per pood. Week by week it has fallen gradually until it is today quoted at 26 copecks per pood free on rail Baku. The fall in the price of Residuals has been greater still, and from 28 copecks per pood (the price at the time of our last report) it has fallen until it has reached 24¾ copecks per pood free on rail Baku for prompt delivery. Kerosene for prompt delivery free on rail Baku has fallen from 33 copecks per pood to 28 copecks per pood.

In consequence of the continued falling prices, buyers have been holding off in the hope of further reductions. Little spot business has been done, and practically no forward business, buyers having confined themselves to purchasing their absolutely immediate requirements.

The stocks at Batoum, therefore, are good, although now that shipment to the interior by the Volga is possible, doubtless a great deal of the production will be diverted in that direction.

English Market Report.

During the whole month of April the market for American and Russian lamp oils in London and Liverpool has been weak, and the tendency a downward one. On the London market during the month there has been a fall of ¼d., and in Liverpool a drop of ½d. has occurred. For the first three weeks the deliveries were poor for the time of year, but during the last week, owing to a spell of dark and wet weather, an improvement took place.

The quotations are as follows:

LONDON—Russian oil, 53⅜d. ex wharf in barrels; American oil, 6¼d. ex wharf in barrels.

LIVERPOOL—Russian oil, 5½d.@5¾d. ex wharf in barrels; American oil, 6¼d.@6½d. ex wharf in barrels.

Indian Market Report.

Since our last report there has been but one slight change in the quotations on the Indian markets. In Karachi Sumatra oil in bulk, which was quoted at Rps. 3. 8. 0., fell to Rps. 3. 6. 0., otherwise all the quotations are unchanged. As regards the deliveries, they are normal for the time of year, and the market continues firm and steady.

The quotations are as follows:

	Rupees.		
BOMBAY—			
American case oil	4.	12.	0.
Russian case oil	4.	8.	0.
"Elephant" oil in tins	3.	13.	6.
Sumatra "Rising Sun" in tins	3.	16.	0.
Burmah oil in bulk	2.	14.	0.
KARACHI—			
American case oil	4.	4.	0.
Burmah oil in tins	3.	8.	0.
Sumatra oil in bulk	3.	6.	0.
American oil in bulk	3.	5.	0.
CALCUTTA—			
American case oil	4.	10.	0.
Russian case oil	4.	4.	0.
Burmah oil in bulk	2.	14.	0.
Borneo oil in bulk	3.	0.	6.
Sumatra oil in bulk	3.	3.	6.
American oil in bulk	3.	3.	6.

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REFINED OIL SHIPPED BY WATER FROM CALIFORNIA

1908. Apr.	Vessel.	Shipped from	Shipped to	Shipped by	Refined Gals.
16	Str. City of Panama	San Fran.	C. Amer.	.....	.....
18	Str. City of Sydney	San Fran.	So. Amer.	.....	7,750
18	Str. Mariposa	San Fran.	Tahita	.....	.....
18	Bg. Three	Richmond	Seattle	Stand.	1,500,000
18	Str. Atlas	Richmond	Seattle	Stand.	1,000,000
18	Str. Alaskan	San Fran.	Honolulu	.....	100,000
18	Schr. James Rolph	San Fran.	Hilo	.....	5,700
24	Ger. Str. Alexandria	San Fran.	C. Amer.	.....	8,550
24	Ger. Str. Alexandria	San Fran.	Mexico	.....	5,000
25	Str. Asuncion	Richmond	Portland	Stand.	1,100,000
25	Str. Catania	Richmond	Seattle	Stand.	1,000,000
25	Str. Argyle	Pt. San Luis	Portland	Union	.....
25	Str. W. S. Porter	Monterey	Portland	Asso.	.....
25	Str. Nevadan	San Fran.	Honolulu	.....	20,150
25	Bk. Mohican	San Fran.	Hilo	.....	.....
26	Bk. Kaiulani	San Fran.	Honolulu	.....	12,000
27	Str. Maverick	Richmond	Seattle	Stand.	1,000,000
28	Str. City Puebla	San Fran.	Br. Columbia	.....	4,250
May.					
2	Str. Nebraskan	San Fran.	Honolulu	.....	2,400
2	Bk. Annie Johnson	San Fran.	Hilo	.....	3,200
2	Str. Alameda	San Fran.	Honolulu	.....	3,350
4	Str. City of Para	San Fran.	C. Amer.	.....	11,000
4	Str. Umatilla	San Fran.	Br. Columbia	.....	6,850
4	Br. Str. Seminole	Richmond	Shanghai	Stand.	2,015,000
6	Str. Texan	San Fran.	Honolulu	.....	35,000
10	Str. Enterprise	San Fran.	Hilo	.....	1,450
11	Str. Rosecrans	Monterey	Honolulu	Asso.	.....
11	Str. Maverick	Richmond	Redondo	Stand.	1,000,000
11	Str. Atlas	Richmond	Portland	Stand.	1,000,000
13	Str. Peru	San Fran.	Mexico	.....	600
13	Str. Peru	San Fran.	C. Amer.	.....	3,400
14	Str. Governor	San Fran.	Br. Columbia	.....	200
14	Ger. Str. Abessinia	San Fran.	C. Amer.	.....	300
	Total				9,846,150

SHIPMENTS OF CRUDE OIL BY WATER FROM CALIFORNIA

Apr.	Vessel.	Shipped from	Shipped to	Shipped by	Crude bbls.
16	Str. City Panama	San Fran.	C. Amer.	.....	60
16	Str. Santa Rita	Pt. San Luis	Ancon	Union	43,000
18	Str. City of Sydney	San Fran.	So. Amer.	.....	3
18	Str. Alaskan	San Fran.	Honolulu	.....	5,000
25	Str. Argyle	Pt. San Luis	Portland	Union	25,000
25	Str. W. S. Porter	Monterey	Portland	Asso.	53,000
25	Str. Nevadan	San Fran.	Honolulu	.....	3,428
May					
11	Str. Rosecrans	Monterey	Honolulu	Asso.	25,000
11	Sch. Monterey	Monterey	Honolulu	Asso.	19,000
	Total				173,494

EASTERN EXPORTS OF MINERAL OIL—YEAR 1908.

Articles and Customs Districts. Crude:	February. Quantities. Gallons.	February. Values. Dollars.	March. Quantities. Gallons.	March. Values. Dollars.
New York	.....	.....	65,000	3,250
Philadelphia	7,947,658	495,444	5,668,205	384,966
Galveston	.....	.....	5,040	261
Sabine (a)	1,205,153	33,847	2,147,332	63,434
Total	9,152,811	529,291	7,885,577	451,911
Naphthas:				
Baltimore	400	48	1,702	198
Boston, Charlestown	.....	.....	1,000	270
New York	822,434	132,236	652,966	106,759
Philadelphia	843,088	92,508	9,500	1,306
Sabine (a)	.....	.....	3,087	477
Total	1,665,922	224,792	668,255	109,010
Illuminating:				
Baltimore	.....	.....	2,671,250	160,289
Boston, Charlestown	6,900	822	2,852	339
New York	46,516,956	3,292,361	56,406,824	4,424,395
Philadelphia	27,597,745	1,578,909	20,461,828	1,298,884
Sabine (a)	1,629,936	73,347	5,979,018	272,711
Total	75,751,537	4,945,439	85,521,772	6,156,618
Lubricating and paraffin:				
Baltimore	391,250	61,934	417,267	58,981
Boston, Charlestown	14,256	3,045	22,587	3,592
New York	9,504,647	1,284,031	10,069,150	1,374,647
Philadelphia	2,215,973	261,755	4,838,354	501,879
Galveston	11,578	2,000	3,450	1,531
Sabine (a)	13,860	1,663	10,404	1,300
Total	12,151,564	1,614,428	15,361,212	1,941,930
Residuum:				
New York	618,750	37,117	.....	.....
Philadelphia	3,054,339	102,990	1,248,557	41,986
Sabine (a)	2,600,700	91,642	1,955,938	69,488
Total	6,273,789	231,749	3,204,495	111,474
Total mineral oils:				
Baltimore	391,650	61,982	3,000,219	219,468
Boston, Charlestown	21,156	3,867	26,439	4,201
New York	57,462,787	4,745,745	67,193,940	5,909,051
Philadelphia	41,658,803	2,531,606	32,226,444	2,229,021
Galveston	11,578	2,000	8,490	1,792
Sabine (a)	5,449,649	200,499	10,095,779	407,410
Total	104,995,623	7,545,699	112,641,311	8,770,943

PACIFIC COAST SHIPMENTS IN MARCH, 1908

CUSTOMS DISTRICTS	CRUDE OIL		NAPHTHAS, ETC.		ILLUMINATING		LUBRICATING		RESIDUUM	
Domestic Exports—	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Alaska	.....	.....	160	51	400	86	.....	.....	.....	.....
Puget Sound	570	34	520	71	1,119	210	25,542	5,418	5,226	289
San Diego	.....	.....	.....	.....	315	54	105	25	2,245	199
San Francisco	.....	.....	25,137	2,249	5,863,229	266,503	29,013	9,422	.....	.....
TOTAL	570	34	25,817	2,371	5,865,063	266,853	54,660	14,865	7,471	488
Shipments to Alaska—										
From Puget Sound	440	49	40,257	6,037	10,041	2,187	3,713	1,289		
San Francisco	2,226,000	31,800	500	112	18,020	1,650	610	153		
Shipments to Hawaii—										
From San Francisco	3,109,000	50,550	72,365	11,501	21,100	3,522	2,719	1,183		

CRUDE OIL SHIPPED BY WATER FROM CALIFORNIA OILFIELDS TO SAN FRANCISCO

1908.

Apr.	Vessel.	Shipped from	Shipped by	No. bbls.
16	Str. W. S. Porter	Monterey	Asso. Oil Co.	42,000
18	Str. Santa Maria	Pt. San Luis	Union Oil Co.	50,000
18	Bg. Ninety-One	Pt. San Luis	Standard Oil Co.	24,000
20	Str. Rosecrans	Monterey	Associated	23,000
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5	Str. Rosecrans	Gaviota	Associated	23,000
7	Str. Atlas	Pt. San Luis	Standard	20,000
7	Bg. Three	Pt. San Luis	Standard	30,000
8	Str. Rosecrans	Gaviota	Associated	23,000
8	Str. Geo. Loomis	San Pedro	Standard	10,000
9	Str. Lansing	Pt. San Luis	Union	45,000
10	Str. Santa Maria	Pt. San Luis	Union	45,000
11	Sch. Roderick Dhu	Monterey	Associated	17,000
12	Str. Col. E. L. Drake	Pt. San Luis	Standard	30,000
12	Str. Whittier	Ventura	Union	10,000
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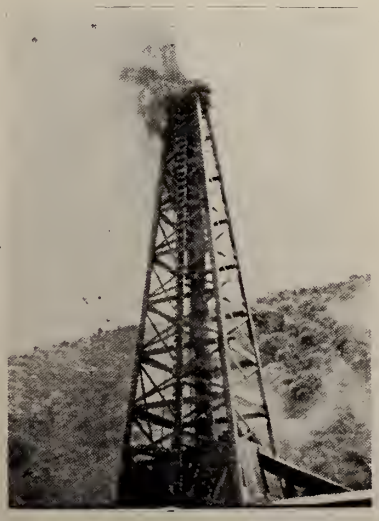

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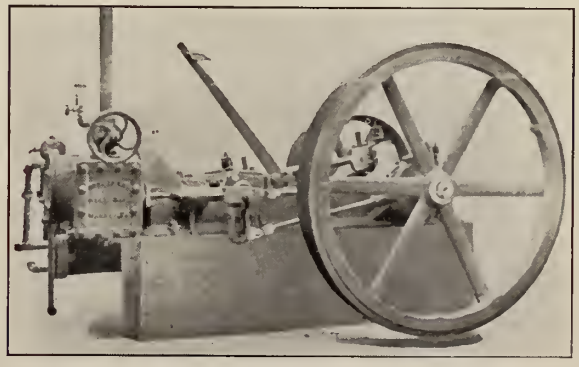

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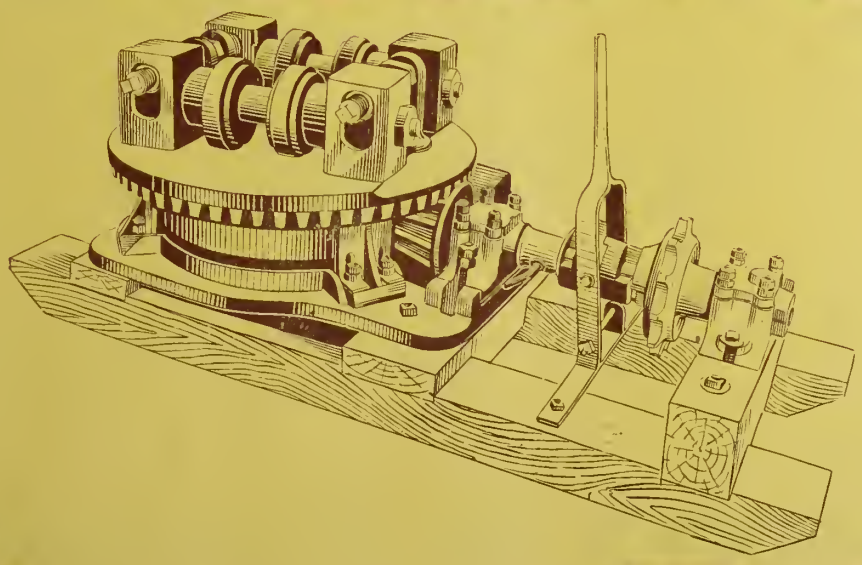

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DATA AND DISCUSSION OF METHODS OF TESTING CALIFORNIA OIL

By J. C. Christensen, B. S.

The published tests of petroleum oils, both crude and refined, afford a mass of data in regard to them, much of which is of very uncertain value, owing partly to the lack of details in regard to the method of testing pursued; partly, to the evident lack of uniformity of methods used (each chemist apparently using a method of his own), and partly to the fact that all oils have been treated alike by the same chemist. In Bulletin No. 19 of the California State Mining Bureau, and in several publications of the United States Geological Survey, will be found distillations of California crude oil showing the percentage of each product that could be obtained therefrom and leading one to assume that these results could be approximated in the refinery. To the author's certain knowledge conclusions based on some of these distillations are entirely erroneous, both in regard to the quality and quantity of the illuminating oil and the lubricating oil obtained. There is no doubt that the percentages were actually obtained by distillation, but when said oils are refined they fail to burn in lamps without smoking, or they possess little or no lubricating value. **The fact that an oil distills between certain temperatures is no guarantee that it will be of any value whatsoever as an illuminant or a lubricant.** These facts may be unknown to many chemists, and account for the misleading reports of the value of certain oils; but are well known to most refiners, and of vital importance to them.

Various petroleum congresses have attempted to standardize the methods of testing oils, both crude and refined, and many of the tests recommended by them are unquestionably scientific and practical; but the attempt to apply a rigid series of tests to all oils, irrespective of their nature and origin, must fail at the outset. To illustrate: Pennsylvania oil, which is purposely cracked in the refining process must necessarily be handled in a manner quite at variance with California oil, which it has been repeatedly shown cannot be profitably cracked.

When a sample of oil is submitted for analysis, the question almost invariably asked is: "What is the oil good for?" To answer this question, the chemist should be thoroughly conversant with refinery practice, and with the practical tests applied by the refiner, the merchant, and the consumer. The testing of oils in the laboratory should follow as closely as possible the best methods in use on the industrial scale.

The following methods for testing California oil have been worked out by the author, are based on the general practice in this State, both in the field and in the refinery, and are submitted to the readers of the California Derrick with a twofold hope: that they will prove useful, and that they will tend toward an increasing uniformity in methods of testing oil.

Sampling.—The date, place, and manner of taking the sample should be recorded. If taken from a tank, equal portions should be obtained from the top, middle and bottom of the tank. The gravity and temperature of each portion are usually taken at the tank. The portions are then mixed and preserved in a closed vessel for further tests. Such samples can be obtained by lowering a closed can attached to a rod into the oil and when the proper depth has been attained pulling out the cork by means of a string previously attached thereto. More convenient sampling bottles are now readily obtainable from dealers in such supplies. A good average sample can be obtained direct from the pump or pipeline if care is taken to draw off equal portions at equal intervals of time.

Water and Sediment.—The determination of water in an oil is most accurately made by means of distillation. The water distilling over with the oil is measured and the percentage present calculated from the known volume of oil taken for distillation. In making this test it will be unnecessary to carry the distillation higher than a temperature of 150° C. But this method is not used in the field because the quantity of "sediment" is usually determined at the same time by the following method: A mixture of 25cc. gasoline and 25cc. carbon bisulphide is made in a graduated tube, the closed end of which is conical, 50cc. of the oil to be tested is poured into the tube and the liquids thoroughly mixed. The tube is then placed in an aluminum case attached to a centrifuge and rotated at high speed for twenty minutes. To prevent breakage of the tubes the aluminum case should be partly filled with coal oil or other liquid to act as a cushion. The sediment and water collect in the conical end of the tube where their volume may be accurately read off. This volume multiplied by two gives the per cent of water and sediment in the oil. The "sediment" is generally small flakes of shale, but is a term used to include all solid impurities in the oil.

Color and Odor.—The color and odor of crude oil need no special discussion.

Specific Gravity.—The specific gravity of the oil should be taken at 15.5° C. by means of a hydrometer graduated to read specific gravity directly, preferably standardized by the government, by comparison with a standard instrument, or by immersing in liquids whose specific gravity have been accurately determined. The specific gravity may also be obtained by the use of a picnometer, or by a Westphal balance, provided the oil is not too viscous. If the temperature of the oil is not 15.5° C. when the sp. gr. is taken, a correction must be made, which, however, will only be accurate if the coefficient of expansion of the oil has been accurately determined. But for all ordinary work the corrections given in the table below may be used.

For oils of sp. gr. .68 to .78	0.00080
For oils of sp. gr. .78 to .85	0.00075
For oils of sp. gr. .85 to .95	0.00070

For each degree above 15.5° C. the correction should be added to the observed reading; for each degree below 15.5° substracted. For example, the sp. gr. of coal oil is .8075 at 17° C., then the sp. gr. at 15.5° C. will be $.8075+(.00075\times2)=.8090$.

If the gravity in degrees Baume is desired, a hydrometer made according to the American standard should be used. The accuracy of the readings should always be ascertained, for instruments made by different makers vary widely. The accuracy of a Baume instrument may be tested by immersing it in liquids of known sp. gr.

and comparing the observed reading with the true value obtained from the following formula, which is according to the American standard:

$$\text{Sp. gr. at } 15.5^\circ \text{ C.} = \frac{140}{130 + \text{Be.}^\circ}$$

The readings are usually corrected to a temperature of 60° F. according to a table of corrections prepared by C. J. Tagliabue of New York, or for approximate work subtract 1° Be. from the observed reading for every 10° Fahr. above 60°, or add if the temperature is below 60°.

Fifteen and five-tenths degrees C. has here been chosen as the standard centrigrade temperature at which the specific gravity should be taken, rather than 15.0° C. as is customary in Europe, because it is nearly equal to the standard Fahrenheit temperature, 60° F. (15.5° C.=59.9° F.)

Flashing and Burning Points.—The Saybolt electric tester is the standard adopted by many cities in California, and the method of using it will therefore be described. The use of this and similar instruments should be discouraged since they give results that are not only liable to great inaccuracy, but are also subject to manipulation. The complete instrument should be purchased and kept in good order. Particular attention being given to the spark coil and batteries, for the "fatness" of the spark greatly influences the results. The instrument should be used in a slightly darkened room and carefully protected from draughts. The water bath is heated to 100° F.; the oil cup, filled to within one-eighth inch of the brim with the oil to be tested, the temperature of which should be between 55° and 70° F., is placed in position; the flash bar, which must be free from oil, is put in place and the flame under the water bath regulated so that the oil heats at the rate of about 2° F. per minute. Oils which flash between 110° and 120° F. are tested at the following temperatures: 95, 100, 104, 108, 110, 112, 115, 117, 119 and 120°. Oils flashing between 120° and 130° F. are tested at 100, 105, 110, 115, 118, 120, 122, 125, 127, 129, 130°. Oils flashing over 130° F. are tested every two degrees until the flash occurs, then at every five degrees until the burning point is reached.

If the flash or fire test is over 175° F. it had better be made in a metal cup. The cup is filled with such a quantity of oil that when heated its surface will be about one-eighth inch below the brim, and heated over a bare flame at the rate of 5° F. per minute. The thermometer should have a round bulb which is barely immersed in the oil. At intervals of 5° F. a small lighted taper—a waxed linen thread is best—is placed over the cup within about one-fourth inch of the oil. A blue flame spreading rapidly over the surface of the oil and immediately dying out indicates that the flash point has been reached. The testing is continued until the blue flash point has been reached. The testing is continued until the blue flame ceases to die out, i .e., until the oil burns. The temperature at which this occurs is the burning point of the oil, or as it is commonly called, its "fire test."

The only instruments that will give accurate results, and the only ones that cannot be manipulated are the closed testers, of which the Abel apparatus is probably the best for most purposes. The clock-work attachment for working the slide is a great convenience, though not essential. For oils flashing below 95° F. (Abel), the directions prescribed by the British Petroleum Act of 1879 for the use of the Abel cup are quite satisfactory and should be closely followed. For oils of higher flash point, the time required to make a test is excessive. For such oils the author pursues the following method: The flash point is rapidly determined in any open cup, 30° added to the observed reading, thus giving the approximate flash point by the Abel cup, the heating apparatus of the Abel tester is filled with oil of very high flash test and heated to twice the temperature at which the oil is expected to flash. The closed cup containing the oil to be tested is put in place and the testing commenced. The temperature of the oil to be tested should be about twenty degrees below its flashing point, though a greater difference does no harm, but only lengthens the time required to make the test. In all tests made in the Abel cup the bath should not be heated during the test.

For lubricating and other oils of very high flashing point (over 180° F.) the Pensky-Martens instrument is by far the best. Directions for using it are supplied by the makers.

Distillation.—The distillation of a small quantity of crude oil affords little information of practical use, and should only be used as a means of making a rapid determination of the percentage of oil distilling below 150° C., or between 150° and 300° C., or both. The fact that the 150°-300° fraction may fail to burn in the lamps now in general use should be kept constantly in mind, and this fraction should not be reported as illuminating oil unless further tests show it to be such.

To make a distillation on a small scale an ordinary distilling flask with a straight side tube should be used. The exact size or shape of the flask is of little importance. On no account should the flask be jacketed with asbestos or other material. The flame should be applied directly to the flask without the intervention of wire gauze, sand bath, etc., and the usual precautions taken to prevent foaming over. The distillation is conducted at the rate of about two drops per second, and should be continuous: i. e., the receiver is changed at the proper time without interrupting the distillation. Fractions should be made and tested as follows:

*Below 150° C.	% by Volume.		Sp. Gr. at 15.5° C.		Index of refraction at 20° C.
150°—300° C.	"	"	"	"	"
Residium.	"	"	"	"	"

*Note:—The per cent of water, if any, should be calculated from the amount accompanying this fraction.

The index of refraction, as determined by the use of some form of Abbe' refractometer, gives valuable information in regard to the amount of cracking that has taken place, and the use of this instrument in the refinery should be encouraged.

The distilling limits of the second fraction, 150°-300° C., are chosen because some of the best coal oil prepared from California crude distills between these temperatures, and therefore the maximum percentage of this product contained in a crude is given by the above distillation. The percentages of oil distilling between the limits specified, as thus obtained, agree very closely with those obtained in the refinery. But it is almost useless to apply any chemical tests to the distillates, for they differ markedly in chemical behavior from distillates made in the refinery. For example, more sulphur is found in the kerosene portion than in normal refinery work; also the loss upon treatment with acid is much greater.

The author recommends that the distillation described above be stopped when a temperature of 300° C. is reached, as usually no information of value can be obtained by further distillation. Of what value is it to know that a certain percentage of oil distills between 300° and 350° C., between 350° and 400° C., etc., when in the refinery the highest temperature attained by the vapors of the last portion of oil distilled does not exceed 275° C.? To be sure, the distilling limits of a lubricating oil are of importance in judging of its quality, but the test had better be applied to the finished oil, rather than to the crude.

Long before a temperature of 300° C. is reached, cracking begins, as evidenced by the production of gas, water, free carbon, and foul smelling hydrocarbons, so that while the percentages of the distillates do not differ much from those obtained on the commercial scale, their properties vary widely. If the distillation is carried further at normal pressure, cracking takes place to such an extent that no reliable results of any kind can be obtained. Moreover, the quantity of distillate obtained would be so small that its properties could not be accurately investigated. Neither does the author favor the distillation of a larger quantity of oil with the use of steam alone, nor with the use of a vacuum alone; nor should air or other gas (except steam) be introduced into the still to prevent bumping, because the action of gases, especially oxygen, on the oil is very marked, and unless it be shown that said action is beneficial their use is to be strongly condemned. All the author's experience has been that oxygenated oils are more difficult to refine, and are inferior in quality to oils carefully protected from the air.

At least twenty-five litres of the oil should be distilled in an iron still (see fig. 1.) thoroughly jacketed with asbestos and provided with a good condenser, a vacuum pump, and arrangements for admitting superheated steam to the still. The still is best fired by gas, and after the naphtha has come off (when the thermometer reads 150° C.) the vacuum pump is started, and steam, slightly

superheated, is admitted in small quantity. The distillate is collected in a clean receiver until the gravity of the distillate reaches 30° Be. From this point the distillation is conducted rather more rapidly, the superheated steam being kept about twenty-five degrees hotter than the vapors of the oil. The receiver is changed again when the gravity reaches 25° Be. The oil distilling from 25° Be. to the finish is run into one receiver to make lubricating stock.

It would seem more rational to separate this fraction into two or more parts, but on account of the difficulty in separating the water from the oil this is not generally done. This difficulty is encountered twice: first, in separating the water from the distillate; second, in separating the water from the oil in treating.

When it is judged that the asphalt in the still should be tested, stopcock "B" (Fig. 1) is closed, "A" opened a few seconds then closed, and a sample withdrawn from the pipe by means of an iron or wooden rod. If the sample can be chewed like gum, without sticking to the teeth, the fire is put out and the vacuum pump stopped, but the steam allowed to run until the still is filled with steam and oil vapor. When a vacuum no longer exists the asphalt may be drawn out—steam all the time being allowed to enter the still in order to prevent explosions or fire.

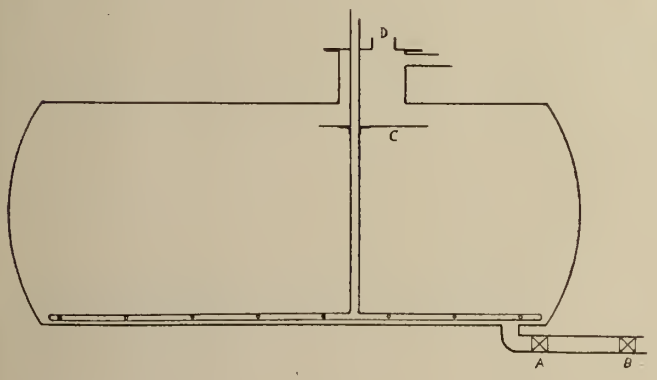

Fig. 1

Testing the Distillate.—The distillates obtained should be tested as follows:

Distillate	% by Vol.	Sp. Gr.	Color	Odor	Index of Refraction at 20° C.	% of Loss With H_2SO_4 of Strength.	% Loss With Fuming Acid 15 to 20% Free SO_3.
Naphtha							
Kerosene distillate*.						94%	
Stove or gas oil. . . .							
Lubricating oils. . . .						80%	
Asphalt							
Loss (Gas)							

*This fraction is called "kerosene distillate" for lack of a better name. Whether it will make kerosene must be determined by further tests.

The Naphtha.—To find the per cent of 66° Be. gasoline obtainable, the naphtha is put into a glass or metal vessel completely encased in asbestos, felt, or the like. Through one hole of the cork passes a metal tube (glass will break), which reaches nearly to the bottom of the flask and serves to convey steam into the liquid. To a second hole in the cork is fitted a simple dephlegmator, made by drawing a 1-inch glass tube down to ⅜ inch, putting a small piece of wire gauze just above the constricted part, followed by large glass beads to a depth of five inches. The vapors are best led off from this dephlegmator by means of a side tube sealed into the glass one inch above the level of the beads; but may find exit through a bent glass tube passing through a cork. While a "Glinsky" dephlegmator may be more efficient than this simple apparatus, the latter is to be preferred because readily replaced if broken. A zig-zag condenser tube is superior to the straight or bulbed forms. First quality elm bark or "suberite" corks should be used throughout. Rubber stoppers cannot be used on account of their solubility in oil.

The distillation is conducted under ordinary pressure by the use of steam alone until the gravity of the distillate in the receiver is 66° Be.—the usual gravity of California gasoline. The volume and gravity of the oil remaining in the still should be noted, and the oil saved.

The Kerosene Distillate should be tested for flash, and if this is not 110° F. (Saybolt), the whole portion should be put into a small steam still provided with a tall (6-inch) vapor pipe to act as a simple dephlegmator, and superheated steam at 125° C. blown through it until the desired flash point is obtained. The volume and gravity of the distillate collected is noted, and it is mixed with the residue from the gasoline and the gravity again taken. From the combined volume the per cent of engine distillate is calculated. The volume of oil remaining in the still is measured, and the per cent of oil of 110° F. flash is reported.

The 110° F. kerosene stock obtained is tested for sp. gr. color, odor, index of refraction, per cent of sulphur, and solubility in acid. The color is determined by the use of any of the standard instruments. To determine the solubility in acid 50 cc. are shaken in a stoppered graduate with 50 cc. commercial 66° Be. sulphuric acid for ten minutes, allowed to stand until separated, and the volume of oil remaining read off. The difference between this reading and 50 cc. gives the amount absorbed by the acid. The test is repeated, using fuming sulphuric acid instead of the 66° Be. acid, and taking care to keep the liquids cool. These tests with acid are of great importance, as they show the relative refinability of oils. Generally from 7 to 12 per cent of oil is absorbed by 66° Be. acid while from 20 to 30 per cent will be absorbed by fuming acid. The exact nature of the hydrocarbons absorbed by the acids of different concentration is at present unknown; but in a general way we know that the olefines, nitrogen bodies, some sulphur compounds, and certain aromatic oils are absorbed by the ordinary acid, while the fuming acid absorbs certain other aromatic oils (notably xylene), some polymethylenes (formerly called naphthenes), and sulphur oils.

To find the per cent of paraffin hydrocarbons in an oil Allen (see Allen's Commercial Organic Analysis) recommends that it be successively shaken with an excess of each of the following acids: Nitric acid of sp. gr. 1.45; sulphuric acid, sp. gr. 1.84; fuming sulphuric acid, containing 20% free SO_3, in each case, taking care to keep the temperature from rising.

The Percentage of Sulphur in a burning oil is usually determined by introducing some oil into an "Engler" lamp, weighing, burning the oil for two or three hours while the products of combustion are drawn through a 5 per cent solution of potassium hypobromite to absorb the gaseous sulphur compounds formed by combustion. The sulphur is found in the solution in the form of potassium sulphate and may be precipitated by barium sulphate, dried, ignited, and weighed. From the known weight of oil burned, the per cent of sulphur may be calculated. A volumetric method may be used to determine the sulphur, in which case, the gases are absorbed in a measured volume of twentieth normal sodium carbonate solution, and the amount neutralized by the sulphur dioxide found by titrating back with standard acid, using methyl orange indicator.

An improved form of Engler lamp, which is especially adapted for the burning of California oils, has been devised by the author. Its construction may be understood with the aid of figure 2. A is the body of the lamp, to which the rubber stopper B is tightly fitted. The wick is held by the tube C. Through the center of the wick passes a small brass tube D, one millimeter in internal diameter, which conveys air to the center of the flame. Tubes C and D are held by the brass place E. F is a small airhole in the rubber stopper B. Its size must be regulated so as to supply the proper amount of air to the outside of the flame. The chimney G connects with the absorbing apparatus H. The tube K connects with an aspirator. The advantages of this lamp are that the quantity of oil burned per hour is increased, combustion is more perfect, the aspirator does not require such careful regulation as with other forms, and it will readily burn oils that smoke in other lamps.

The estimation of the amount of sulphur in a burning oil is very important, for it has been found that oils containing over ½ per cent sulphur require a large proportion of acid to purify them. Such oils are not refined, or, if refined, are sold to the Orient as "Export oil." It is usually better to take off the gasoline and engine distillate from such oils, leaving the coal oil fraction in the residium which is used as fuel oil.

The kerosene stock is then refined as described by the author in the California Derrick, Vol. 1, No. 1, using such a quantity of acid as may be necessary to produce an oil that will burn satisfactorily in a B. & H. mammoth lamp. A good practice is to use about 7.5% by weight of 66° Be. sulphuric acid, followed by about 15% of fuming acid. The mixing of oil and acid is best carried out in an iron agitator similar to a churn, the temperature being kept at about 100° C. by means of a Bunsen burner. Of course, the quantity of acid necessary and the temperature at which the best results are obtained, can only be ascertained by performing several experiments. The percentage of oil lost in refining should always be determined. For most purposes it will be unnecessary to redistill the oil after treatment with acid. Redistillation hardly alters the burning qualities of the oil and is only resorted to in order to make the oil water white. The color of the "re-run" oil should be determined by means of one of the standard colorimeters. Wilson's is to be preferred, since the shades of color are given in terms already in general use, i. e., water white, standard white, prime white, straw. It is unnecessary to determine the color more accurately, for the color of an oil has little or no connection with its usefulness.

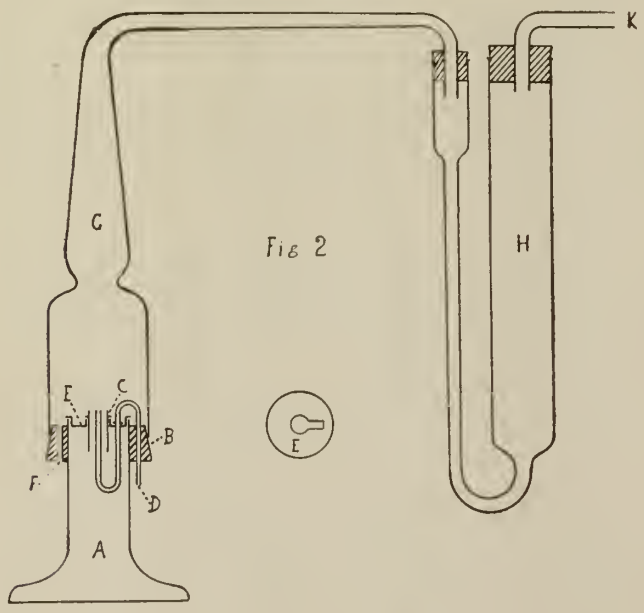

Fig 2

The Burning Test is performed by burning the oil in a "B. & H." mammoth lamp. The lamp should be at least half full of oil, for if only a small quantity of oil is placed in the bottom of the lamp it will burn well, whereas, when the lamp is full, it will smoke. The oil should burn without smoking, whatever the size of the flame. Many oils will be found to burn without smoking when the flame is very low or very high, but will smoke badly when the flame is of medium height. In actual use this is a cause of great annoyance, for if, through jarring, the wick become lowered; or if through charring of the wick, the flame is diminished, volumes of smoke pour out of the chimney, filling the room with oily soot and disagreeable odors. Oils that will not stand this test cannot be considered first grade oils. Though low grade oils will burn in ordinary flat-wicked lamps, they generally emit a peculiar odor, give off vapors that cause smarting of the eyes, and coat the chimney with a gray or brown deposit, thus making the light dim.

A further test should be performed by burning about a pint of the oil in an ordinary flat-wicked lamp, size "B." A clean wick is used for each test. The cap being thrown back, the wiek is lit at one edge, and the rate at which the flame travels across it noted. If the oil is of good quality the flame will travel slower than if the oil is inferior. With the chimney on, the size and color of the flame is noted, also the size of the "dark space" at its base. The size of the "dark space" (gas zone) is proportional to the quality of the oil—a good oil having a large "dark space." The height of the flame is observed from time to time until the oil is nearly consumed. The wick must not be disturbed during the test. The flame should not diminish more than 50% in height and the wiek should not be unduly charred—if the lamp is put out and allowed to cool the wick should ignite nearly as readily as when freshly trimmed. The chimney should show only traces of a grayish film, and no appreciable odor or irritating gases should be evident during the test, if the oil is of good quality.

Finally the lamp should be freshly filled and allowed to burn with a very low flame for several hours. A good oil will burn without odor, and without emitting irritating vapors. The chimney should show only a slight grayish coating with sometimes a brownish tint opposite the edges of the wick.

Mineral Seal, or 300° fire test oil, can be made from the residue left in the still after the coal oil has been "re-run," by treating it (hot) with an additional 10 to 20 per cent by weight of fuming sulphuric acid, re-running, treating cold to improve the color and odor, and thoroughly washing. The percentage obtainable from the crude should be calculated. This oil should be about 33° Be. gravity, at least prime white, and should burn satisfactorily in lamps made for such oils.

The Stove or Gas Oil will usually require no further testing, as it is used only for fuel oil or gas making. Sometimes its flash or burning point is taken.

The Lubricating Oil distillate should be heated to about 40° C. (104° F.) and treated with from 2 to 5 per cent by weight of concentrated sulphuric acid—in the refinery, the sludge obtained in refining gasoline, engine distillate, etc., is often used for this purpose—until an oil of clear red color is obtained. The strength of the acid necessary to secure the best results can only be determined by experiment, but acid of 61° to 65° Baume is usually better than stronger acid, and a trace of nitric acid is generally an advantage. Sometimes, however, fuming sulphuric acid is required.

The acid sludge is allowed to settle thoroughly (in the laboratory the oil may be filtered through glass wool), and the oil neutralized with lye of about 10° to 15° Be. gravity, and an additional 1 per cent of lye added and thoroughly mixed with the oil to combine with the fatty oils and the petroleum acids and phenols. If the soda does not separate from the oil, either water or strong brine—sometimes fine salt—is added to the mixture, and heat also applied, though heating generally should be avoided on account of the darkening of the oil when heated with lye. Then the oil is well washed with warm water and "reduced" in a still using the highest possible vacuum and plenty of steam until the residue in the still has a viscosity equal to that of heavy red engine oil. The first 2 or 3 per cent of the distillate is run to gas oil, and the remainder collected in two fractions: Neutral oil, constituting the portion distilling until the gravity of the distillate is about 22° Be.; and Light Engine Oil the remainder of the distillate. The "reduced" oil in the still is dried by shutting off the steam and fire while maintaining the vacuum for some time. The dry oil is drawn out through a coil of pipe cooled with water so that the temperature of the oil will be below 140° F. when it reaches the air. A sample placed in a one-inch test tube or sample bottle should show a fine red color by transmitted light with no trace of cloudiness—due to moisture—upon cooling. By reflected light the color should be greenish, with perhaps a blue fluorescence or "bloom." The gravity will be about 19.8° Be., flash 350° F., zero cold test, and the viscosity at 100° F. about 230.*

*Note.—The viscosity of the Standard Oil Co.'s "Atlantic Red."

If it is not up to these requirements it may be classed as No. 2 oil; or if too low in color for No. 2, it should be again treated with acid, neutralized, and **thoroughly** washed with hot water until free from alkali and soap. The water is allowed to settle out of the oil

as completely as possible, after which it is "blown," to remove all traces of moisture. To "blow" an oil, heat it to 130°-140°—never hotter—and blow warm dry air through it until a cooled sample shows no cloudiness.

Although the moisture could be more easily removed from the oil by adding a little plaster of paris and filtering, or by using lime to neutralize the acid and omitting the washing with water, and subsequently filtering, it is better to carry out the process exactly as it is conducted in the refinery, for some oils turn dark upon being blown, a fact that can be ascertained only by experiment. If the oil darkens upon being blown, it may be dried by means of a vacuum as hereinbefore described; or this failing, it must be filtered.

Filtering of oils should be avoided on the technical scale on account of the expense connected therewith. Several hundred barrels of oil may be blown at one time at very small cost, practically no attention is required, and when the oil is finished there is no apparatus to clean and put in order.

The neutral and light engine oils distillates, if of the proper color, odor and viscosity, need no further treatment. This, however, is not usually the case, and it is necessary to treat them with acid, alkali, etc., and to reduce them to the proper viscosity in the same manner as the heavy engine oil is handled, except that a weaker acid is usually advantageous in treating these oils. Many refiners prefer to reduce the oil to the proper viscosity before treating with acid, but the author is inclined to believe that this is wrong, because a better color and odor is secured by the method of treatment here recommended. The salability of an oil depends largely upon its color, hence this property should be enhanced by every known means that does not at the same time decrease the lubricating qualities of the oil.

The Neutral Oil, when finished, should have a clear yellow color, with sometimes a shade of red, a gravity of about 27° Be., 275° F. flash, zero cold test, and a viscosity of about 50 at 70° F.†

The Light Engine Oil should be of a clear red color, 21.5° Be. gravity, 310° F. flash, and a viscosity of 125 at 100° F.‡

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†The viscosity of the Standard Oil Co.'s "White Neutral."

‡The viscosity of the Standard Oil Co.'s "Renown Engine."

The viscosity of an oil is determined by allowing it to flow through a slightly conical tube of small bore and noting the time required for a measured quantity to flow out of a given temperature and under a given head. For this purpose many instruments have been devised, those of Engler, Saybolt and Redwood being most common. Engler's apparatus is the standard in Germany, Russia and the United States; Redwood's in England, and the Saybolt instrument is exclusively used by the Standard Oil Co. and cannot be purchased in the market. The unfortunate feature connected with the use of these instruments is that the viscosity is usually given by the ratio of the number of seconds required for the oil to flow out, to a number of seconds required for water at 20° C. to flow out. If the instruments are not exactly alike this ratio will not be the same. Moreover, both the Engler and Redwood viscosimeters are awkward to manipulate. The Saybolt is much more convenient.

But these facts need not now deter one from using any instrument of this character, for Messrs. Archbutt and Deeley have published a method of standardizing a viscosimeter so as to give the viscosity in "absolute" units—(Dynes per square centimeter). (See "Lubricants and Lubrication," by Archbutt and Deeley.) If the viscosity of an oil is expressed in absolute units, its viscosity will be the same, no matter what instrument was used for its determination, just as a pound of shot will weigh one pound whether weighed on a spring balance or on a platform scales.

The Cold Test of an oil is a test applied to it in order to determine the temperature at which it ceases to flow freely, and, in some cases, its solidifying point. To apply the test, some oil is placed in a one-inch test tube cooled in ice or ice and salt until it ceases to run out of the inverted tube. The temperature at which this occurs is noted, and called the "cold test" of the oil. The temperature at which it becomes solid, or nearly so, is called the solidifying point. Considerable latitude is allowed in the application of these tests, and they at best can be only approximate, depending upon the rate of cooling, and the judgment of the person applying the test.

Cylinder Oil is made by the "cylinder stock" process alone. To determine whether a crude will make cylinder stock, will require the actual making of cylinder oil from the residium obtained by distillation of the crude until the gravity of the residium is about 17° Be. This residium, after cooling, is treated with spent acid (sludge from the cold treatment of the light oils) until all the asphalt is removed from it. (It follows that if the crude contains much asphaltum, it will not be profitable to make cylinder oil out of it.) The oil remaining after the sludge has settled should be transparent in thin layers, and of a greenish brown color—not black. The oil, after neutralization, must be capable of reduction in a still (with vacuum) until the desired viscosity is obtained. Some oils decompose so badly that cylinder (and other) oils cannot be made from them. The explanation of excessive decomposition may possibly be that the sulphur in the oil causes deep seated chemical changes such as take place when sulphur and paraffin are heated for the purpose of generating hydrogen sulphide gas; at any rate, the decomposition (cracking) is most marked in oils containing more than the usual quantity of sulphur.

The finished cylinder oil will have a gravity of about 19° Baume, 450° F. flash, a cold test of 35° or 40° F., and a viscosity of 120 at 212° F.*

*The viscosity of the Standard Oil Co.'s "Capital Cylinder."

The final test of all lubricating oils is their behavior in actual use; a test that can hardly be applied in the laboratory. But all other conditions being the same, oils of equal viscosity may generally be used interchangeably.

The present tendency among engineers is to use oils of lower viscosity than in times past, and to supplement their lubricating power by the addition of from 2 to 5 per cent of flake graphite—a practice that has the author's hearty approval.

The base of an oil is said to be either asphalt or paraffin, according as the oil leaves a residue of asphalt or paraffin upon distillation. To determine this, the distillation must not be carried too far or coke will be obtained; nor must it be stopped too soon or the residue will fail to solidify. A paraffin residuum resembles a mixture of lampblack and wax or tallow, while an asphaltic residuum resembles black pitch.

Nearly all asphaltic oils contain paraffin. To ascertain if an oil contains paraffin, the heavier distillates are cooled in a mixture of ice and salt. If a white solid crystallizes out, it is usually assumed to be paraffin. The crystals may be separated from the cold oil by filtering, with pressure, through a fine wire gauze or a cloth. The collected paraffin is washed with a small quantity of gasoline to free it from the heavy oils. Its melting point should be between 40° and 70° C.

Testing Refined Oils.

Refined oils should be suitable for the use for which they are sold, and the tests applied to them should be adequate to determine whether such is the case.

The more important tests have been given under the discussion of the testing of the various fractions of crude oil, so that only a brief review, and a few passing comments, will be added.

Gasoline should burn with a blue flame in the usual form of burner. If it does not, too much "heavy oil" is present.

Benzine, which is used for cleaning clothes, should evaporate from a fabric within a reasonable time, leaving no pronounced odor on the goods.

Turpentine substitutes should evaporate from a piece of white paper in less than forty-five minutes, leaving no grease spot.

Kerosene need be tested only for flash point, sulphur, and burning qualities. Kerosene is supposed to be burned in a lamp. If it will not burn, the fact can be ascertained only by trial; and if it will burn, what is the use of further tests? The reason why an oil will not burn may be very difficult to ascertain, and may involve years of chemical research. Borneo oil, it is said, will not burn in flat-wicked lamps, but will burn well in lamps with a central draught. California oils, if improperly refined, behave in the opposite manner.

Viscosity is the prime requisite of a lubricant. If the oil has the proper viscosity, is free from acids, alkalis, and gum-forming bodies, it will undoubtedly give satisfaction. Here also if an oil is unsatisfactory, the reason and remedy may be very hard to discover.

In a final word, the author wishes to again emphasize the importance of simple and practical tests which will show the value of an oil.

GOVERNMENT OIL INVESTIGATION

Review of Statistical and Technical Facts Submitted to the President by the Commissioner of Corporations.

By Lewis H. Eddy

DISTRIBUTION OF PETROLEUM.

Cost of Pipelines and Pipeline Transportation.

For the purposes of this review the term Distribution is employed, not in the strict sense in which it is used in the report of the Commissioner of Corporations, but particularly to include the collection and distribution of crude petroleum by pipelines and the delivery of refined products by tank wagon and barrels, that is to say, by methods owned and operated by the producing companies as distinguished from the transportation by common carrier (principally railroads).

The report presents with much detail and various tabulations the various features of the pipeline industry: the cost of pipe, and the transportation of it; the cost of construction and of operation; the rates of transportation of oil by pipeline; describes the leading pipeline systems and their respective capacities and proportionate business done; and takes up also the tank wagon system of the local delivery of refined oil.

The present chapter in this series of reviews of the Commissioner's report has to do only with the cost of pipeline. This will be followed, in another issue, by other features of the pipeline system of distribution of petroleum, covering briefly the history of the pipeline industry.

In discussing the cost of pipeline transportation in comparison with pipeline transportation rates the report presents several tabulated statements showing the cost of pipelines, including the cost of pipe, fittings, leases, rights of way, construction, etc., from which several tables the following are made up. Referring to these tables the report says that on the basis of information obtained from the Prairie Oil and Gas Company estimates may be made for the cost of constructing pipelines proper and for the cost of pumping stations also in the Appalachian and Indiana pipeline systems. In general, the report continues, the cost of constructing a pipeline of given capacity varies according to the distance which the pipe has to be transported, the topographical conditions under which it is laid, the value of the land for right of way, the wages of labor and other minor factors.

The pipe used in the Mid-Continent field, as well as in the East comes largely from Pittsburg and vicinity, and the freight rates to the Mid-Continent field are so much higher than to the Eastern fields as to fully overcome any disparities in cost in the opposite direction. Following the three tables respecting the cost of construction, the variance in the freight rates on pipe is shown in another tabulated statement.

Cost Per Mile of Pipeline in Mid-Continent Field.
(Stated in Dollars and Cents.)

Name, Length and diameter of line	Pipe	Fittings	Leases, Rights of Way	Construction	Total	Percentage cost of pipe of total
Humboldt-Kansas City—						
117.5 mi. 8-inch line	4381.07	7.63	78.47	1030.38	5497.55	80
Chanute-Humboldt—						
8.5 mi. 6-inch line	2799.94	.10	8.03	573.78	3381.85	83
Caney-Neodesha—						
33.0 mi. 6-inch line	2531.99	.31	40.03	606.26	3179.59	80
Bartlesville—						
58.4 mi. 6-inch line	3154.04	5.04	50.50	891.83	4101.41	77
Average	$2918.00		$43.43	$770.00	$3735.00	78
Total average for right of way	$62.00					

Total Cost of Pipeline and Pumping Station, Mid-Continent Field.

Cost of pipeline—Humboldt-Kansas City Line.	
Line pipe	$514,776.08
Fittings	806.75
Permanent leases and rights of way	9,220.65
Construction	120,011.15
Telegraph	24,513.20
Real Estate	12,000.00
Miscellaneous	1,057.06
Total	$682,474.89
Cost of Humboldt Pumping Station.	
Boilers	2,736.00
Pumps	9,000.00
Fittings	3,427.05
Wooden tanks	100.00
Iron tanks (4 of 35,000 bbls. capacity)	30,800.00
Buildings	25,527.77
Electric light plant	1,999.12
Dam at Humboldt	674.24
Tools and machinery	1,381.20
Total	75,645.48
Total Investment	$758,120.37

Estimated Cost of Reproducing Trunk Pipelines.
(Standard and Tidewater Companies, 1904.)

Appalachian Field to the Seaboard:	Total Miles.	Cost per mile. 6-inch.	8-inch.	Total Cost.
3 lines	449	....	6000	$ 2,694,000
6 lines	2415	4000	....	9,660,000
1 line (5-inch)	66	4000	....	264,000
39 pumping stations, $75,000 each	....	....	....	2,925,000
Total				$15,543,000
Lima, Ohio to the Seaboard:				
1 line	738	....	6000	$ 4,428,000
1 line (5-inch)	47	4000	....	188,000
1 line	48	4000	....	192,000
9 pump sta., $75,000 each	....	....	....	675,000
Total				5,483,000
Total 2 fields, 13 lines, 48 pump stations	3763	....	....	$21,026,000

Cost of Pipe and Freight on Pipe, August, 1904.

(In cents per foot):	6-in.	Freight	Total	8-in.	Freight	Total
Cost f. o. b. Pittsburg	43.24	....	....	77.55	....	....
To Pennsylvania points	....	2.72	45.96	....	4.09	81.64
To Kansas points	....	8.72	51.96	....	13.10	90.65
To Indian Ter. points	....	10.88	54.12	....	16.34	93.89
Total cost in dollars per mile:						
Pennsylvania points	....	....	$2427	....	....	$4311
Kansas points	....	....	2744	....	....	4786
Indian Territory points	....	....	2858	....	....	4957

In estimating the cost of transportation by pipeline the report presents a detailed statement for two months of 1905 of the operating cost of the Humboldt (Kansas) station of the Prairie Oil and Gas Company, which at that time operated the entire trunk pipeline from Humboldt to Kansas City, 117 miles; but, for various reasons, the report says, this line is not typical. Aside from the fact that the figures cover only two months the Humboldt station at that time was pumping only about 6000 barrels of oil per day, and the fact that the Humboldt station used natural gas for fuel, which would make the expense materially less than at stations which use coal, of which there are a large number on the Eastern pipelines. The table in the report from which the following totals are taken gives the items of expense in detail.

Expense of Operating the Humboldt-Kansas City Trunk Pipeline.

Average of expense for the months of March and May, 1905:	
For repairs to buildings, boilers, pumps, other equipment, main line pipe, telegraph system	$ 312.70
For running station, engineers, firemen, telegraph operators, other labor, fuel, lubricants, packing, other supplies, unclassified freight and teaming, line-walking and watching, salaries and expenses of operators, superintendence, miscellaneous	1,163.13
Total expense of operating per month	$1,475.83
Total for year, on basis of above average	$17,709.96

The following table, taken from the report, gives the estimated operating expenses on Seaboard trunk lines, in detail, per month, and the total estimate per year; and on this estimate of cost the estimate of cost of pipeline transportation is based.

Estimated Total Operating Expenses on Seaboard Trunk Lines.

Labor, per month	$ 750
Fuel, per month	600
Lubricants and supplies, per month	50
Superintendence and office expenses, per month	200
Changing construction, repairs and maintenance, per month	200
Taxes and Insurance, per month	300
Administration expenses, per month	100
Total, one month	$ 2,200
Total operating expenses, one year	$26,400

The report presents detail tables of the estimated cost of pipeline transportation in the Appalachian field, and between Lima, Ohio, and the Seaboard, and from Lima to Whiting. These estimates relate solely to the trunk lines, and do not cover the cost of local gatherings of the oil. In computing the cost of operating the trunk lines from the Appalachian field to the Seaboard the entire quantity of both Appalachian and Lima-Indiana oil delivered to the Seaboard in 1904 is taken as a basis.

The report says that, except in California and Texas, very nearly all the "transportation" of crude oil in the United States is by pipeline, and that the greater part of the lines are owned or controlled by the Standard Oil Co., through its various subsidiary concerns.

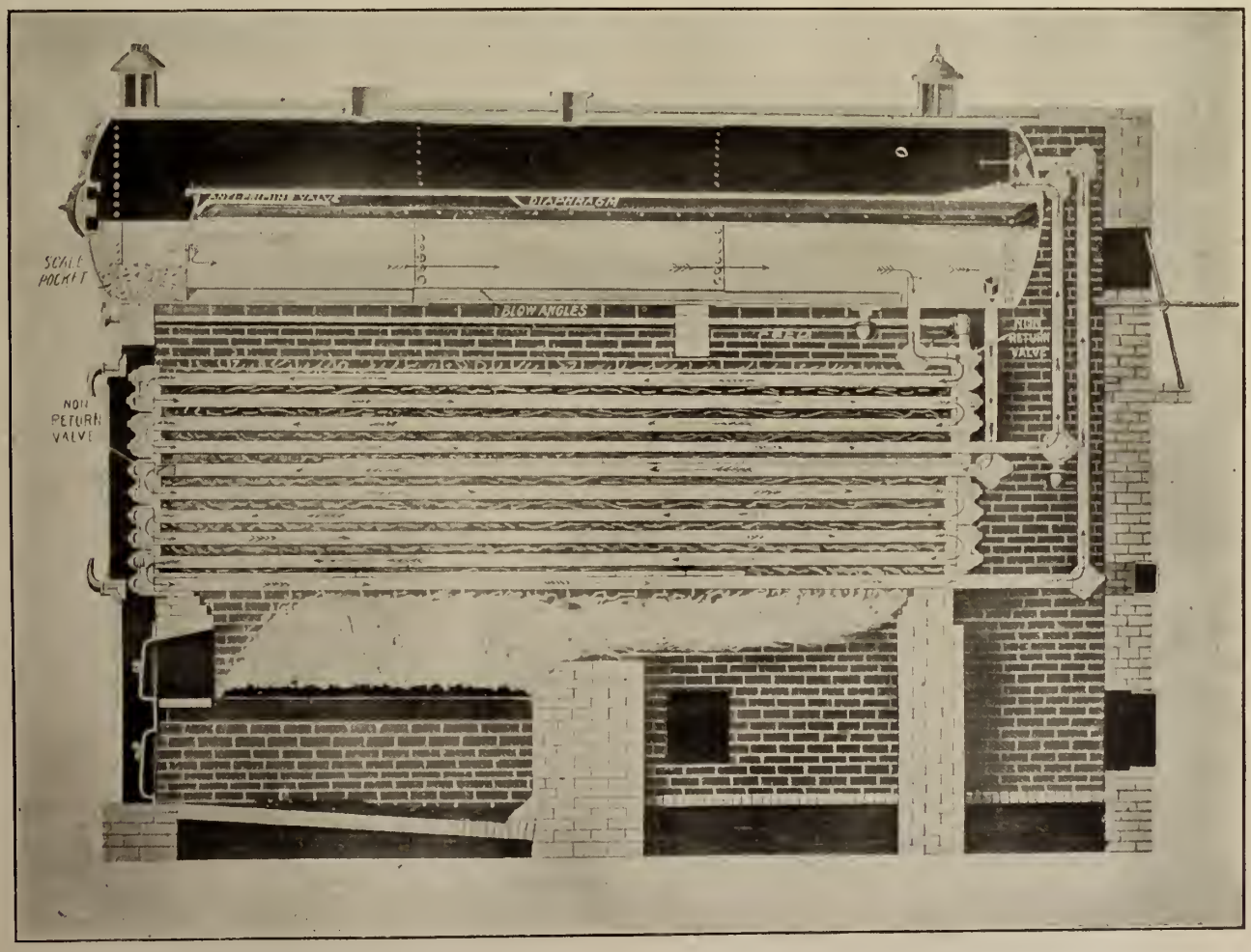
REPORT OF EVAPORATIVE TESTS ON A 200 H-P PARKER WATER-TUBE BOILER

USING OIL AS FUEL.

By R. F. Chevalier.

Evaporative tests here described were made by the writer in January and February, 1908, on a Parker water-tube boiler at the plant of the Tubbs Cordage Co., San Francisco. The main object of the tests was to ascertain the efficiency of the boiler as being operated under commereial conditions, with the prevailing furnace arrangements, and after altering the same, to determine what per cent had been gained thereby in boiler efficiency and incidentally at what capacity the boiler was being operated. During these tests the boiler was to maintain its operative commereial load.

Number and Character of Tests.—Five tests were made, the principal ones being No. 1 and No. 5, the data of which are given in this report. No. 1 was of eight hours duration, and made before the alterations to the furnace. No. 5, of 9 hours duration, was made after the alterations. Nos. 2, 3 and 4 were preliminaries, of 3 hours duration each, and made only to determine the relative values of different types of flame. All the tests were made under operating conditions.



Parker Water-Tube Boiler, Showing Water Circulation with Feed Direct to Element.

The Boiler Tested.—Parker water-tube boiler, 200-horsepower, 12 tubes wide, 8 tubes high; length of tubes 18 feet (horizontal), diameter, 4 inches; eircumferenee, 1.05 feet.

There is one horizontal drum 20 feet long, 48 inches diameter, divided by a diaphragm of ¼-ineh steel plate, riveted to the shell. This diaphragm extends from the rear head to within 2 feet of the front head; and to this end and to the lower half of the drum is riveted a vertieal steel plate, forming the diaphragm head, thereby making two separate ehambers. In this head is a manhole, to which a cover is hinged on the inside, and when closed makes a water-tight joint. This swinging manhole cover aets as a non-return or anti-priming valve. Its function is to allow the water in the upper half of the drum to enter the lower, but to prevent any return to the former. The space between the diaphragm head and the drum head proper acts as a scale pocket. The upper half or section of the drum is known as the steam space; the lower half as the water space. In the latter is a rectangular box which is connected to the feed element by a nipple that passes through the shell directly underneath it. The feed water enters the drum through the front head, and is discharged into this box by the means of an internal feed pipe.

The tubes are divided into five elements. The upper, or feed, element acts as an economizer. It is 2 tubes high, 8 tubes wide. (Feed element of boiler in ent, 4 tubes high and 8 tubes wide.) Its function is to heat the feed water, which enters through the drum and is discharged into the internal box, as above deseribed, the latter having a non-return, or check, valve to prevent the feed water from entering the drum, thereby forcing it into the tubes of the element. This non-return valve is so arranged that, in event of the feed being interrupted or lessened, the water from the drum enters the box, enabling the circulation to continue.

The flow in the element is forward and back, alternately, through each tube in the top row, then down to the next row, finally discharging through a vertical upeast into the rear drumhead above diaphragm. The water flows along diaphragm into the scale pocket, through the swinging manhole into the lower or water chamber of the drum. The blowoff connection is made at the bottom end of the feed element, and solid water can be forced through the entire element under full boiler pressure. The lower

elements, four in number, which are 6 tubes high and 3 tubes wide, receive this heated water and convert it into steam. The water coming down from the drum enters two headers, each of which controls two of the elements, and passes through non-return check values, which maintain a counterflow, and then on down through the tubes. The lower end of each element is connected by a separate upcast to the steam chamber of the drum. This steam is then led to a fitting, from which a 4-inch tube carries it down to a superheater header, and after passing through the superheater tubes, of which there are sixteen, 1¼ inches in diameter and 12 feet long, is collected in another header, from which a 4-inch tube carries it through to the stop-valve casting. There is a flooding device and a drain on the superheater element. This superheater is located in the rear of the furnace below the lower row of tubes. The heated gases of combustion come in contact with it at a very high temperature, as only a small percentage of the heating surface has been traversed by the same before reaching the superheater.

Two of These Units Comprise the Entire Battery.—At the time the tests were made, the factory was running at two-thirds capacity, therefore only one boiler was being operated. Both boilers are operated when the factory is running full.

The Furnace.—The ordinary type such as used for coal burning. On the grate bars were placed whole fire bricks, laid in loosely to allow the admission of air for combustion. This arrangement did not conform to any standard. The flame was long and narrow, spreading at the rear of the furnace directly under the opening of the first pass.

Alterations to Furnace consisted in rearranging the loose brick on the grate bars. The whole fire bricks were replaced by soap bricks, so that the air entering might be better distributed. The long flame was changed to a short one, spreading as it left the tip of the burner, and coming in contact with the vertical side walls of the furnace within three feet of the front. With the long flame, the superheater tubes were walled in with fire bricks, as the superheat was too high otherwise. When the short flame was adopted, this wall was removed and a checker work placed in front of the superheater in order to protect it from the direct impingement of the flame. A wall of loose fire brick was built on the sides of the furnace in order to protect the original walls from the action of the flame. The area, consequently the volume, in the front of the furnace was increased by lowering the grate bars and adjoining brick work, thus forming a pit, which rises again to the original level of the furnace at a point near the superheater.

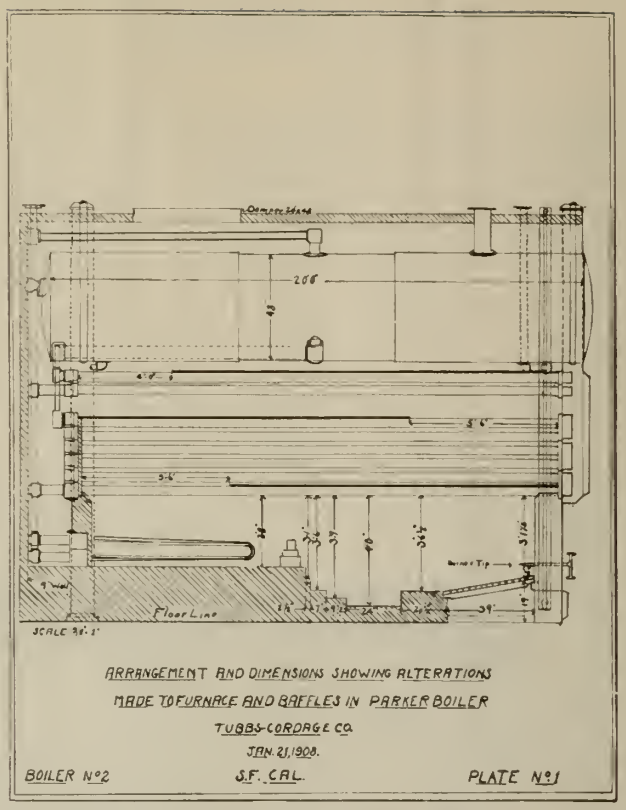
Dimension and area of furnace and air setting as altered are shown in plates No. 1 and 1A.

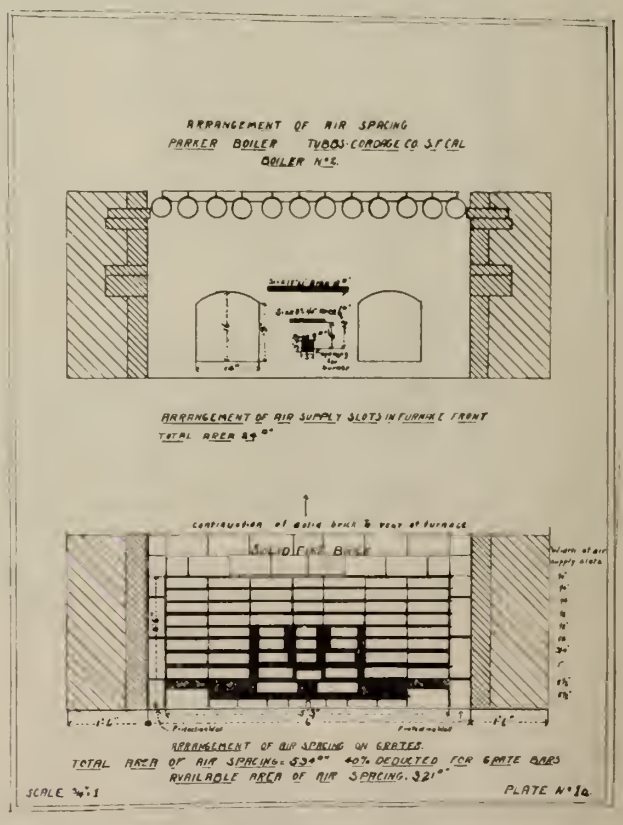
The Burner.—Internal mixing type known as the "Owen's." It is divided into two channels; the upper one contains the oil; the lower, the steam. At the end of these is a plate having small perforations, the larger number or greater area of perforations being on the bottom where the steam passes through. After the oil and steam leave this plate, they enter a hollow tube or pipe, which is used as a mixing chamber, at the end of which is a slot whereby the mixed oil and steam pass into the furnace in a fan-shaped flame.

Water-Heating Surface of Boiler.—Determined by actual measurement; all surfaces of the boiler in contact with water on one side and hot gases on the other were taken into consideration, and are tabulated as follows:

Diameter of tubes, 4 inches; circumstance, 1.05 feet.
Tubes in first pass—1 tube high, 12 tubes wide.
No. of linear feet of one tube exposed to gases, 16.5.
Area of one tube, 17.32 sp. ft.; 12 tubes..... 208. sq. ft.
Tubes in second pass—5 tubes high, 12 tubes wide.
No. of linear feet of one tube exposed to gases, 17.5.
Area of one tube, 13.38 sq. ft.; 60 tubes..... 1102.2 sq. ft.
Tubes in third pass—2 tubes high, 12 tubes wide.
No. of linear feet of one tube exposed to gases, 18.
Area of one tube, 18.9 sq. ft.; 24 tubes..... 436.6 sq. ft.
Area of tube leading from drum to feed element.. 9. sq. ft.
Drum—20 ft. long, 48 inches diameter.
No. of linear feet of drum exposed to gases, 19.
Area of drum, 237.5 sq. ft.
Area of ½ circumference of drum..... 118.7 sq. ft.

Total water-heating surface..... 1891.5 sq. ft.




ARRANGEMENT OF AIR SPACING
PARKER BOILER TUBBS-CORDAGE CO S.F.CAL
BOILER No 2.
ARRANGEMENT OF AIR SUPPLY SLOTS IN FURNACE FRONT
ARRANGEMENT OF AIR SPACING ON GRATES.
TOTAL AREA OF AIR SPACING = 539" 40% DEDUCTED FOR GRATE BARS
AVAILABLE AREA OF AIR SPACING 321"
SCALE ¾"=1
PLATE No 1a

Air Spaces Shown in Black.

Superheating Surface.—The superheating surface was also obtained by measurement, the actual surface exposed to gases being 62 square feet.

Rating of Boiler.—The builder's rating of the boiler is 200-horse-power. On this rating is based the per cent of overload. The rate

of evaporation per square foot of heating surface is determined from the measurements as tabulated above.

Quality of Steam.—Superheated. Observations of the temperature of the superheated steam were taken by a thermometer placed in a well situated in the main steam pipe line, a short distance from the boiler stop valve. As will be noted, this temperature remained nearly constant throughout variable load conditions of the boiler, the extreme variation being 12 degrees F. throughout a range of 40 boiler horsepower. Reference to the steam table had to be resorted to in order to determine the normal temperature of the steam due to the average observed gauge pressure during the test, as after the test when the fire was extinguished the superheat did not disappear, though the pressure dropped below the observed average. In the calculations for the quality of steam, the specific heat of the superheated steam was assumed as forty-eight hundredths. (.48).

Apparatus for Handling and Weighing the Feed Water.—The feed water was taken from the cooling tower by gravity and weighed in a barrel placed on a pair of standardized platform scales. The scales were placed on the top of the hot well, and the water, after being weighed, emptied therein. When the test was started, the level of the water in the hot well was noted. This level was maintained at the end of each hour as well as at the end of each test. From the hot well a belt-driven duplex pump took the water and fed it through a closed heater to the boiler. The water level in the boiler was maintained constant, this being facilitated by a by-pass valve placed in the feed pipe before the water entered the heater, the discharge from this by-pass valve leading back to the hot well. This valve was regulated by the fireman so that a constant level was maintained. As the only other connection in the feed line was the discharge from an auxiliary pump, possibility of any leakage occurring was guarded against by having a drain open between this pump and its discharge valve. The outlet of the blowoff and the drains from the water column and gauge glass were in plain view. They were carefully watched, no leakage occurring from either one of these points.

Apparatus for Handling and Weighing Fuel Oil.—This consisted of a pair of standardized platform scales, on which the weighing barrel was placed and the supply of oil pumped from the storage tank into same as required. From this barrel the oil was run by gravity into a second barrel, from which it was taken by a pump, passed through the heater, then to the burner. This oil pump was fitted with an automatic relief valve, by means of which a constant pressure was maintained in the oil line to the burner. The discharge from this relief valve led back to the barrel from which the suction of the pump was taken. As the oil was discharged from the weighing barrel, a small sample was collected. This operation occurring twice an hour, the sample collected represented the average quality of the oil used during the test.

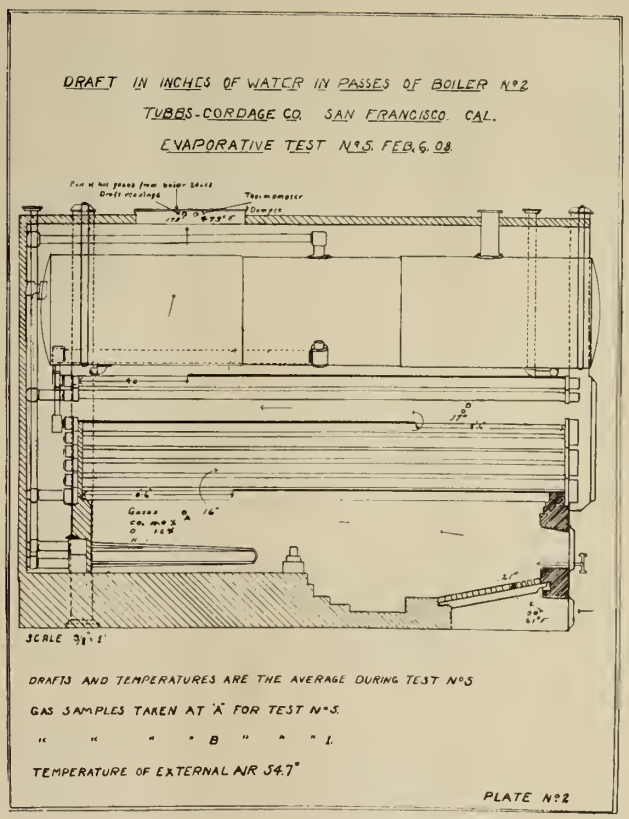
Steam for the Burners.—The amount of steam used by the burner for atomizing the oil was determined only in test No. 5, as the apparatus for securing the necessary data had not been arranged for test No. 1. This steam was passed through an orifice on either side of which was a steam gauge. During the test these gauges were read every fifteen minutes. When the test was completed, steam was passed through the same orifice, under duplicate conditions, and condensed. The condensation was weighed, thus obtaining the average weight per hour. This was saturated steam taken directly from the drum of the boiler.

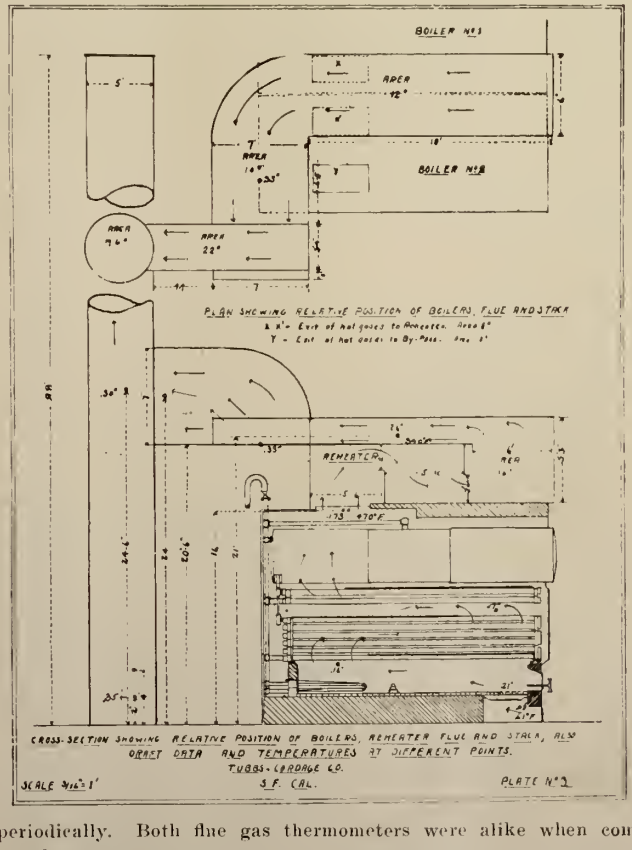
Heat Value and Characteristics of the Fuel.—The heat value of the oil was determined with a Parr calorimeter. Three tests were made of each sample, and the average results taken.

In order to determine the percentage of moisture in the oil, 100 cubic centimeters were placed in a distillation flask and gradually heated to a temperature of 150 degrees Centigrade. The distillate collected in the graduated tube, and the resulting water was measured. The gravity was determined by a hydrometer, Beaume scale.

The above determinations were made by the writer at his laboratory.

Instruments Used in Tests.—The boiler room steam gauge was compared with a test gauge, and found to be correct. All thermometers were correct, the same being calibrated by the writer


DRAFT IN INCHES OF WATER IN PASSES OF BOILER N°2
TUBBS-CORDAGE CO. SAN FRANCISCO. CAL.
EVAPORATIVE TEST N°S. FEB. 6. 08.
SCALE 3/4" = 1'
DRAFTS AND TEMPERATURES ARE THE AVERAGE DURING TEST N°5
GAS SAMPLES TAKEN AT "A" FOR TEST N°5.
" " " " B " " " 1.
TEMPERATURE OF EXTERNAL AIR 54.7°
PLATE N°2


BOILER N°1
BOILER N°2
PLAN SHOWING RELATIVE POSITION OF BOILERS, FLUE AND STACK
CROSS-SECTION SHOWING RELATIVE POSITION OF BOILERS, REHEATER FLUE AND STACK, ALSO
DRAFT DATA AND TEMPERATURES AT DIFFERENT POINTS.
TUBBS-CORDAGE CO.
S.F. CAL.
SCALE 3/16" = 1'
PLATE N°3

periodically. Both flue gas thermometers were alike when compared.

Flue Gas Analyses.—Analyses of the gases of combustion were made during each test in order to determine the relative values of the air spacing in the furnace. The Orsat apparatus was used, and determinations of carbon dioxide and free oxygen were made, and only a few of carbon monoxide, as in rare cases was any of this gas present, and then only a trace.

Although the object of rearranging the furnace was to decrease the amount of excess air entering for combustion, thereby increasing the percentage of carbon dioxide, attention is called to the fact that in test No. 1 samples of gases were collected from the front of the boiler in the second pass. In test No. 5, samples were taken at the rear of the furnace, just before the gases entered the first pass, a hole having been drilled through the brick setting for the purpose of inserting the sampling tube.

Owing to the different locations from where the samples were taken in the two tests, a true comparison could hardly be made, so during test No. 5, in order to obtain a comparison, three samples were collected from the same location as in test No. 1. The average composition is as follows:

Average of Samples of Dry Gases Taken From Second Pass.

Composition.	Test No. 1 (of 7 samples)	Test No. 5 (of 3 samples)
Carbon dioxide	11.8%	13.6%
Oxygen	5. %	2.6%
Carbon monoxide	0.	0.
Nitrogen	83.2%	83.8%
Per cent of excess air.....	28. %	13. %

Gas Passages in Boiler, Flue and Stack.—The baffles were arranged horizontally over the tubes, as prevailing in the Heine type of boiler. There are three rows of baffles, making three passes. For arrangement and dimensions, see plate No. 1.

In the flue arrangement is a reheater. Its function is to utilize the waste heat in the escaping gases from the boiler by increasing the temperature of the exhaust or receiver steam from the high-pressure cylinder of the main engine before it enters the low. This reheater is so arranged that the hot gases from the boiler pass through it, then make two right-angle turns into a flue over the reheater, doubling back to a cross flue at right-angles to the reheater flue, and then make another right-angle turn into a flue leading to the stack. The height of the stack is 88 feet above the boiler room floor, diameter 5 feet. Between the boiler and the flue over the reheater is a by-pass used when raising steam or when there is no steam passing through the reheater tubes.

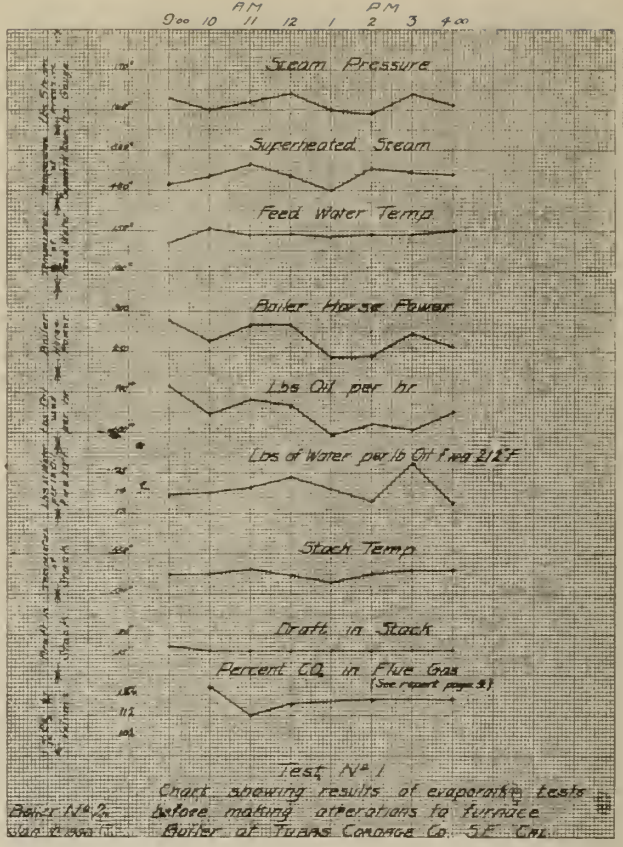
For sizes and general arrangement of the boilers, reheater, and flues, see plate No. 3.

Observations.—The following observations were taken every thirty minutes:

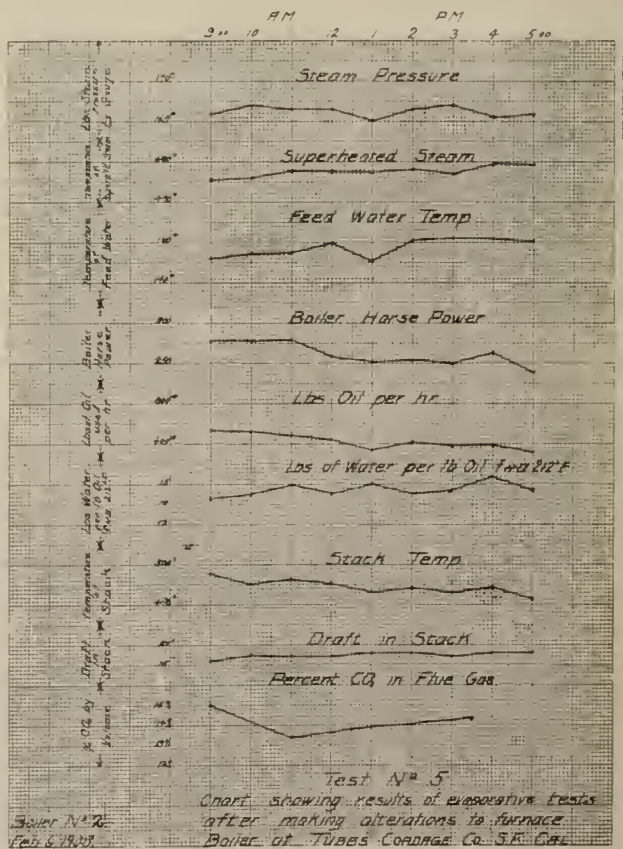
Steam pressure.
Oil pressure.
Draft pressure.
Water level in gauge glass.
Temperature of feed water.
Temperature of oil.
Temperature of flue gases.
Temperature of air entering ash pit.
Temperature of boiler room.
Temperature of external air.
Temperature of superheated steam.

Conditions During Tests.—At the start and finish of both (No. 1 and No. 5) tests the fire was maintained constant. If it had been extinguished to equalize the furnace conditions, a stop of at least three minutes would have been necessary, and this would have reduced the steam pressure considerably. The state of the fire was maintained constant for a period of five minutes before the beginning and finish of each test. The water level was measured at the beginning and end of each test, and maintained nearly constant throughout each run, this being facilitated by the by-pass valve previously mentioned.

The internal surfaces of the boiler were thoroughly cleaned before test No. 1, and the boiler was not opened again until after test No. 5 was completed. The boiler had been operating five days from the time of cleaning when test No. 1 was conducted, and twenty-one days at the time of test No. 5. After the last test the boiler was opened, and a slight coating of scale was found in the bottom row of tubes, thickness of same being less than one-thirty-second (1/32) of an inch. All the other tubes were clean. No scale nor soft mud was found in them. It had been deposited in the scale pocket.



Test No. 1



Test No. 5

DATA AND RESULTS OF TESTS ONE AND FIVE.

Tests made by R. F. Chevalier. Kind of fuel, California crude oil, Standard Oil Company's "Fuel Oil." Method of starting and stopping tests, running. Water heating surface, 1,891 square feet. Superheating surface, 62 square feet.

	Before Alterations.	After
Date of trial, 1908	Jan. 10	Feb. 6.
Test number	1	5
Boiler No.	2	2
Total Quantities.		
Duration of tests, hrs.	8	9
Weight of oil as fired, lbs.	5,190.	5,504.
Percentage of moisture in oil, per cent	.6	1.7
Total weight of oil consumed, corrected for moisture, lbs.	5,158.9	5,410.5
Total weight of water fed to boiler, lbs.	61,960.	68,641.
Water actually evaporated, corrected for superheat in steam, lbs.	66,006.	73,013.
Factor of evaporation	1.1901	1.1802
Equivalent evaporation from and at 212° F., lbs.	73.739.	81,010.
Hourly Quantities.		
Oil consumed per hour as fired, lbs.	648.7	611.5
Oil consumed per hour corrected for moisture, lbs.	644.8	601.1
Water evaporated per hour, lbs.	7,745.0	7,626.7
Equivalent evaporation per hour from and at 212° F., lbs.	9,217.0	9,001.0
Same per square foot of water-heating surface, lbs.	4.87	4.75
Steam used by burner per hour (saturated), lbs.		276.
Steam used by burner per cent steam generated (saturated)		3.6
Average Pressures, Temperatures, Etc.		
Steam pressure by gauge, lbs.	161.7	162.9
Oil pressure at burner, lbs.	78.0	100.0
Force of draft between damper and boiler, inches	0.16	0.173
Force of draft in ash pit, inches	0.12	0.08
Force of draft in furnace, inches	0.14	0.21
Temperature of external air, degrees	57.0	54.7
Temperature of boiler room, degrees	60.5	63.8
Temperature of air entering ash pit, degrees	57.6	61.0
Temperature of flue gases at damper, deg.	525.6	473.0
Temperature of flue gases after reheater, degrees	352.3	319.0
Temperature of superheated steam, degrees.	487.0	484.0
Temperature of steam before superheater corresponding to pressure on boiler gauge, degrees	371.0	371.7
Number of degrees of superheating, degrees.	116.0	112.3
Temperature of feed water, degrees	147.8	155.3
Temperature of fuel oil at burner, degrees.	130.0	130.0
Average water level above bottom of glass, inches	6.	6¾
Boiler Horsepower.		
Horsepower developed A. S. M. E. rating, b. h. p.	267.	260.8
Builder's rated horsepower, b. h. p.	200.	200.0
Per cent of builder's rating developed, per cent	133.	130.0
Economic Results.		
Water apparently evaporated under actual conditions per pound of oil as fired, lbs.	11.93	12.47
Equivalent evaporation from and at 212° F.—		
Per pound of oil as fired, lbs.	14.2	14.71
Per pound of oil, corrected for moisture, lbs.	14.29	14.97
Efficiency.		
Calorific value of dry oil per pound, B. T. U.	18,363.	18,409.
Efficiency of boiler based on oil corrected for moisture, per cent	75.1	78.5
Composition of Flue Gases.		
Carbon dioxide by volume, per cent	11.8	14.2
Carbon monoxide by volume, per cent	0.0	0.0
Oxygen by volume, per cent	5.0	1.8
Nitrogen by volume, per cent	83.2	84.0
Properties of Fuel Oil.		
Gravity of oil, Beaume	16.2°	16.°
Percentage of moisture, per cent	.6	1.7
Calorific value of dry oil, B. T. U.	18,363.	18,409.
Per Cent Gain.		
Gain in efficiency, per cent		4.5

Remarks.

In conclusion, attention is called to the fact that this boiler is not operated under conditions conducive to high efficiency, as the factory is started at 7 o'clock in the morning and run until noon, and shut down for three-quarters of an hour, then again started and closed down at 5 o'clock, when the fires are extinguished. This causes the brick walls to cool off considerably, and the heat thus lost must again be absorbed by them during the day's run. Throughout the tests the regular fireman operated the burner. No more than the usual attention was given to the cleaning of the soot from the tubes, which is blown off in the mornings by a steam jet.

Attention is called to the constant overload on this boiler; also to the variation of the load. The latter in itself is detrimental to high efficiency. It will also be noted that the draft at the damper is very small, having only sixteen to seventeen hundredths of an inch (3/16 inch) of water, observations of which were made with an Ellison draft gauge.

RELATIVE VALUES OF OIL AND COAL FUEL

Records of Tests on Stationary Boilers of the Same Type Reported

By R. F. Chevalier.

The relative commercial value existing between coal and oil as fuel, irrespective of the cost of handling, is shown by the following data. This data is taken from tests made on the same type of boilers (Parker water-tube). The test on the boiler using coal was conducted by Prof. H. W. Spangler, at the Philadelphia Rapid Transit Co., Philadelphia. The test on the boiler using oil as fuel was made by the writer at Tubbs Cordage Co., San Francisco.

The data respecting the oil fuel were taken from one of a series of tests, and show the maximum efficiency obtained with the boiler under commercial operating conditions and a variable load. (These conditions are described in the article under the caption "Report of Evaporative Tests on a 200 H-P Parker Water-Tube Boiler,"

As the rating of the boiler using coal is 700 (boiler) H-P, and that of the one using oil only 200 (boiler) H-P, naturally the highest efficiency would be obtained with the former; thus coal is favored. The coal-burning boiler was equipped with a mechanical stoker; and it is interesting to note the relative amount of steam used to operate the stoker, and that used by the burner to atomize the oil.

It is also interesting to note the comparison of the composition of the gases of combustion and the per cent of excess air above the amount theoretically required for perfect combustion by different fuels. The per cent of builder's rating developed was practically the same, and the steam was superheated in both instances.

The coal used was fine anthracite. The oil was California crude oil as sold by the Standard Oil Co. for fuel purposes, and from which the lighter hydro-carbons had been distilled. The heat value and other data pertaining to the fuel, as well as a comparison of the results and efficiencies obtained with the same, are shown in the following tabulation:

Fuel.	Coal.	Oil.
Gravity of oil, Baume		16.2°
Per cent of moisture in fuel	3.9	1.5
Per cent of ash	17.87	
Calorific value, by Parr Calorimeter, per pound of dry fuel, B. T. U.	11,811.	18,099.
Boiler Horsepower.		
Horsepower developed, A. S. M. E. rating.	832.3	241.
Builder's rated horsepower	700.	200.
Per cent of builder's rating developed	118.9	120.
Economic Results.		
Water apparently evaporated under actual conditions per pound of fuel	7.118	13.12
Equivalent evaporation, F. & A., 212° F. per pound of fuel	9.0767	15.11
Same per pound of dry fuel	9.4451	15.34
Same per pound of combustible	11.83	15.34
Efficiency.		
Efficiency of boiler	82.76	81.8
Per cent of steam generated used by stoker	5.8	
By burner		3.58
Analysis of Dry Gases by Volume.		
Carbon dioxide	7.82	14.6
Oxygen	7.50	1.2
Carbon monoxide	.13	.00
Nitrogen	84.55	84.2
Per cent of excess air above amount theoretically required	50.	5.6

Assuming the cost of coal to be $4.00 per long ton, and the cost of oil to be $1.00 per barrel, the following comparisons can be deducted:

From the results as above tabulated, we have an evaporation of 222.5 pounds of water per gallon of oil, cost of this gallon being $0.024. An equivalent evaporation required 23.57 pounds of coal, at a cost of $0.042. This places the fuel value of oil at $0.042 per gallon; or $1.764 per barrel of 42 gallons.

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JUNE, 1908

The appointment of Mr. William R. Wheeler of San Francisco to be assistant secretary of the Department of Commerce and Labor should be looked upon by oil men as a favorable sign for them, not that Mr. Wheeler is a more competent man than Mr. Laurence O. Murray, who was promoted by the President to a Cabinet position, but because Mr. Wheeler has special qualifications and experience, particularly on the Pacific Coast, in transportation matters. His long experience as traffic manager of Holbrook, Merrill & Stetson's large business, and the fact that Mr. Wheeler is, indeed, what he declared himself on taking the office of assistant secretary of the Department of Commerce and Labor, a plain business man, makes him invaluable. And he is so plain a business man that there will be no misunderstanding him when he gets down to the business of regulating the business of corporations that violate the laws. It was the active work of the Department of Commerce and Labor, through the direct action of the Bureau of Corporations, that put the Independent oil men of the Pacific Coast on their feet. And since the regulation of the transportation companies, both by rail and water, is deemed a prime essential of the hour, President Roosevelt made no mistake when he selected a man so well versed in traffic affairs to handle the details of the department of which Mr. Oscar L. Straus is the efficient head. The California Derrick has no desire nor inclination to harrangue the transportation and other corporations for what may be termed the evils of their past. They did business in the usual business way recognized in commercial and transportation circles; and, like all other men and corporations devoted to the science of money getting, they got all that was coming their way. The commercial world is a sordid institution that society tolerates until it grows unpopular; when society demands the regulation and restriction of the commerce and the transportation business, because—well, probably because the demand is popular. Society is sheep.

There appears in this issue of the California Derrick a report of evaporative tests on a Parker water-tube boiler, using oil as fuel, and full and complete data and results, together with a record of tests showing the relative values of coal and oil as fuels for steam generation. These reports and data were prepared by Mr. R. F. Chevalier, consulting engineer, of Alameda, from tests made by himself under professional employment. Mr. Chevalier possesses the faculty of expressing with clarity as well as precision the engineering terms that describe the procedure and results of his engineering tests. So that there is here no occasion to amplify or explain for the benefit of the lay readers of the Derrick, or engineers who are inexperienced in the use of oil fuel. Mr. Chevalier talks for himself. These reports appeared first in the Journal of Electricity Power and Gas, a long established and reliable technical journal; and the fact that they did so appear adds to their value and to the reputation of Mr. Chevalier. The California Derrick reprodnces these valuable data and reports in the knowledge that they will reach engineers and operators of industrial plants that could not be reached by the Journal of Electricity—the two journals circulating as they do in different fields. The reports are arranged in a slightly different order in the Derrick from the appearance in the Journal, but there has been no change in the record, data, or results. One improvement the Derrick has made is in the enlarging of the illustration of the boiler, the detail of which is an important feature of the report. Mr. Chevalier's card appears in the advertising pages of the Derrick, and the line of work he announces—the experting of oil plants and furnaces for economy of fuel, and the making of determinations of heat values—writes him down as a useful engineer in a community that is devoted to the employment of petroleum oil as steam fuel.

It is too early in the proceeding in the Federal court to express opinion as to the actual relation of J. F. Krause to the money that it is claimed has been embezzled in the stock deals promoting the Mt. Hamilton and the Esperanza oil companies. The operations of these companies were in the Coalinga field. The first of these operations was by the Mt. Hamilton Land and Oil Co., a concern that drilled a well about 1600 feet some five years ago, with the result that only a seepage of oil was found. The principal holdings of the Esperanza Oil and Land Co. had a more prospective value, but the operation was well without the proven territory of the field, and was generally considered to be of purely speculative value. Contrary to the reports of the daily press, these holdings are not considered by oil men as of any great value. Some portions are located land, but several miles from the nearest producing well. It is not likely that any great amount of the money realized from the sale of stock was expended on the properties of these companies. But every man is entitled to his day in court, and if Deputy Sheriff Pixley of San Jose is correct in his surmise the present swindle charged against Krause of getting $70,000 out of a Dunkard community in Pennsylvania seems to fall, and the real gainers in the transactions may be the men who are said to have bought the stock at a low figure and floated it among the innocent Dunkards. Whatever the outcome of the present investigation by the Federal court, there should be a wholesome lesson learned by the various stock promoters who have nothing of value to give in return for the money they get out of confiding innocents. It is likely that the Government will get around to this class of stock swindlers in good time, and when it does there will be something undoing. Meanwhile, Mr. Krause is entitled to the benefit of a doubt.

The sad demise of Mr. Judson Brusie, secretary of the State Board of Railroad Commissioners, has developed a fact and made it public that should have been exploited a long time ago; that the office of secretary of that almost useless State board has been a sinecure for years, representing merely a reward for political work. As evidence of the condition, the daily press has reported that Mr. W. S. Leak has offered to do the work of the secretary, without pay, if the widow of Mr. Brusie may be appointed to the office. That is to say, that Mrs. Brusie will have nothing to do but draw the salary, while Mr. Leak will have nothing to do but attend the meetings of the board and give the stenographer occasional instructions. Mr. Leak is a politician—sometimes; generous—sometimes. He recognizes that his fellow politicians owe something to the widow of Mr. Judson Brusie, and he is ready in his generous mood to help the State pay the debt, by proving that the position of secretary of the State Board of Railroad Commissioners is merely a political handout.

Late News Dispatches.

A dispatch from New York of June 19 announced the retirement of Henry M. Flagler from the vice-presidency of the Standard Oil Co. He is succeeded by W. H. Tilford, former treasurer.

An Austin, Texas, dispatch of June 23 says that four applications for writs of garnishment growing out of the suit of the State of Texas against the Security Oil Co. et al. The garnishments affect the several defendants, including the Standard Oil Co. and affiliated companies, and the Sante Fe Ry. Co., who are said to be indebted to the State of Texas in the aggregate sum of more than $6,000,000 for violations of the anti-trust law of the State.

Frederick A. Hyde and Joost H. Schneider were convicted on June 23 at Washington, D. C., of conspiracy to defraud the Government of valuable lands in California. John H. Benson and Henry P. Dimond were found not guilty.

EVOLUTION AND EDUCATION IN THE PETROLEUM OIL INDUSTRY

The Coast Defense Monitor Wyoming, now lying at Mare Island awaiting her test trial trip, is the first ship of the United States Navy fitted for burning fuel oil. She has just been remodeled as an oilburner.

Of all the countries that are seriously concerned regarding fuel for their navies Great Britain alone stands in no present need of a course of study in the applied science of steam generation with oil fuel to the propulsion of deep sea vessels. In fact, the British Admiralty has practically solved the problem of using petroleum as a motive power for warships, by the adoption of the device of Mr. J. K. Kermode of Liverpool. The Dutch, German, Swedish and Italian powers are investigating and experimenting. The United States Government has done a little in the way of tests and experiments, but has made small effort compared to the energy that the British have put forth. The comparison is all the more significant in view of the fact that England has no oil field, but is dependent on California, Texas, and Baku. But while the question of supply has been much more serious to England than to America the problem of the possible future of petroleum production has not been so serious as the delay the solution of the problem of the oilburner as a generator of steam for the navy. Indeed, the faith of the British Admiralty in the future of petroleum is manifest in the provision already made, and making, for the storage of oil fuel at various naval ports. This storage, in addition to the six million-barrel tankage at Portland, includes some twenty-four tanks with an added capacity of some thirty-six million barrels.

EVOLUTION OF THE OILBURNER.

Many of the big English warships are fitted with both coal bunkers and oil tanks, and use the two fuels; and one of these oil-burning ships has a record of forty knots an hour, while one of the new destroyers is being keyed up to fifty knots. Compare this speed of forty knots with the initial investigation made by the United States Government in 1902 on the Oceanic steamer Mariposa, when a representative of the Navy Department made observations on the round trip voyage between San Francisco and Tahiti, reporting an average of 14 knots an hour. The evolution of the oilburner applied to ocean craft is here illustrated by the difference between 14 knots and 40 knots an hour. In these six years experiments and tests have evolved practical and efficient oil burners now in use on about 100 coasters and deep sea vessels plying in and out of the port of San Francisco. The great convenience and economy in the handling of fuel oil have been factors in the advancement of its use, both on the sea and on the land. In the early stages of the expansion of the use of liquid fuel in sea-going vessels may be noted the Arizona's trip from Honolulu to Philadelphia, 10,000 miles without a stop en route for fuel, and the voyage round the Horn by the Associated Oil Company's tank steamer W. S. Porter with oil fuel for power. In these half dozen years the United States Navy has excelled all others in target practice, and great strides have been made in the construction of invulnerable naval craft, but the British navy has been the first to make practical preparation for the use of petroleum oil fuel in great warships, and that in the face of the fact that England must import its supply. Since the coming of the Atlantic fleet of the American navy into the waters of the Pacific there has been a great deal of talk of the need of more battleships, and particularly the augmentation of the Pacific fleet. And while this cry for a greater fleet is in the air the fact should not be overlooked that from San Diego to Bellingham there is not enough coal produced to warm the cookstoves of this coast, while California alone is producing fuel oil at the rate of more than forty million barrels a year, and that while the British navy is burning American oil the American navy is burning British coal.

EDUCATION OF THE CONSUMER.

The question of the fuel oil supply in the United States must be solved by the consumer, and it is the opinion of the California Derrick that it is being so solved. The impression obtains, perhaps quite commonly, that on the Pacific coast the education of the fuel oil consumer running concurrent with the period of low prices was due solely to the low prices, and would not otherwise have been accomplished. This is a plausible assumption that once served a purpose, which no longer attracts attention. It is sufficient that the education was accomplished, even at the risk of driving more producers out of the business than did actually succumb. But it could have been as easily accomplished with prices that would have allowed the producer a margin on his investment and the consumer an economy of fuel. The consumer who got his education during the period of low prices, commonly spoken of among the producers as the "nineteen-cent period," when the operator produced the oil and sold it at about the actual cost—in some instances below the cost—of production, is now inclined to persuade himself that he is being imposed upon by high-priced oil; so the "nineteen-cent period" of education has in some instances proved a boomerang. But it will do no great harm. The educated consumer knows that the requirements of the industrial and the marine oilburner can be met, and he is solving the question of supply by demanding that they shall be met. A glance back over the first three-quarters of the present decade should be sufficient encouragement for the future. There has never been a time in that period when there was any real cause for alarm. There was a decline in production in 1906, chiefly confined to Texas and Indiana, while in California the decline in production amounted to only 329,875 barrels, representing the difference between 33,427,473 barrels in 1905 and 33,098,598 barrels in 1906. In that year the consumption of California oil was in excess of the production; but that did not worry the consumer a great deal—he was educated, and he knew the cause of this insignificant decline in production, and knowing it, increased his demands—with the result that the California production in 1907 was approximately 40,000,000 barrels, and it is a safe estimate that in 1908 the production will approximate 45,000,000 barrels.

If the Department of the Navy has the faith that the British Admiralty has expressed in the future of the petroleum oil supply, and equal confidence with the educated consumer on the Pacific Coast in the efficiency of the deep sea oilburner, there may be hope and even a prospect that when the new battleships are ready for the augmentation of the Pacific fleet they will be fitted with oil burners and with oil tanks as well as coal bunkers.

TOURING THE OILFIELDS OF THE WORLD.

Mr. J. D. Henry, editor of the Petroleum World, London, and author of "Oil Fuel and the Empire," and of "Thirty-five Years of Oil Transport," is in America for the purpose of visiting the oilfields of this country on a tour round the world. The California Derrick is advised by letter under date of June 1 from Mr. F. Rushton Ablett, business manager of the Petroleum World, that Mr. Henry will visit the oilfields of California. Mr. Henry's position as editor and author is that of an irrefutable authority in all branches of the petroleum oil industry, so recognized in every country where petroleum is produced. His present undertaking to visit all the oilfields of the world in a continuous tour bears a significance that will attract the thoughtful consideration of corporations, companies, and individuals engaged in the production or the consumption of petroleum oil. While the purpose and the results of the tour may more directly concern the British Empire, there is no country engaged in the production or interested in the consumption of industrial or marine fuel that may not be benefited by the publicity of Mr. Henry's observations and conclusions. His "Thirty-five Years of Oil Transport" has a particular interest for the student of the American petroleum industry, as it presents a deal of original information respecting the future possibilities of the industry, and describes the evolution of the tank steamer, in which the United States plays a considerable part. The readers of Mr. Henry's works may reasonably expect other volumes of equal value as a result of this world tour. A history of the oil fields of the world, and their estimated probable life, would be of incalculable value; and a study of the evolution of the deep sea oilburner would be of especial value to the United States. But the interest in and benefit to be derived from a discussion of this subject by Mr. Henry would by no means be confined to this country. However, a discussion of any branch of the industry that may be presented by Mr. Henry will be eagerly read by both technical and practical men engaged in the production and the consumption of petroleum.

Reported by

Special Field Representatives

of the

California Derrick

SANTA MARIA.

The Union Oil Company is now running twelve strings of tools, and has three new derricks up ready for work. This company has sixty-four completed wells, with a monthly production of about 550,000 barrels. The greater part of the development work is being done on the Newlove property, but there are also tools running on the Squires, California Coast, Hobbs, Fox, Kaiser and Hartwell properties.

The Pinal Oil Company is deepening two of its old wells, Nos. 1 and 9, and running four other strings of tools. This company now has seventeen producing wells, which yield a production of from 75,000 to 100,000 barrels per month. The development work now being done is confined almost entirely to the Southeast portion of the property, and the new wells are all showing promise of being good producers.

The Brookshire Oil Company is working on one of its old wells, No. 3, and is running three other strings of tools on new wells. This company has four producing wells, one of them (No. 5) being over the 1000-barrel mark. While the new wells were all started this year, they are all three pretty well along, and will shortly be brought in. The company is working north along its western boundary.

The Western Union Oil Company is running four strings, and has thirty-three producing wells. It is extending its operations towards the south, and while it seems probable that the wells will have to be drilled deeper the farther south they are drilled, still the productions are expected to more than offset the increased cost.

The Graciosa Oil Company is operating five strings, with eleven completed wells, and one new derrick up. This company is also working towards the south with its new wells.

The Dome Oil Company is running four strings, with three completed wells and one new derrick up. This company is drilling its new wells at various portions of its territory, which consists of but 75 acres in the old field. It has 160 acres in Cat Canyon, but as yet has not begun operations there.

New Pennsylvania Petroleum Company has now three completed wells, and is running two strings. It has just brought in its No. 3 well, but it is too soon to determine what it will produce, as it has been pumped only a few days, and not long enough to be thoroughly cleaned out.

Rice Ranch Oil Company is now running two strings, with four completed wells. This company is operating on the south and west lines of its property.

Hall & Hall are running two strings, with two completed wells. The drilling is being done on the south line of the property.

The Lucerne Oil Company is now down about 2500 feet with its first well, and is said to have a good showing of oil and gas. It is estimated that it will be necessary to go over 3000 feet to get pay oil.

The Coblentz Oil Company has shut down its No. 1 well, and is now drilling in No. 2 further west on its south line, where it joins the Newlove property of the Union.

The Laguna Oil Company is reported down about 2000 feet. This well is the farthest north of any now being drilled in the field.

The Radium Oil Company is still drilling on its No. 1 well at a point where its property corners with the Brookshire and Hartnell. It is down over 3400 feet, and while the well has been worked on over two years, the company feels encouraged by the present showing, and hopes to strike a good well within a few hundred feet.

The Santa Maria Central, Central Union, and Santa Barbara Oil & Mining companies commenced operations some time ago, but have all shut down. All of them struck some difficult sand at the outset. It is reported that the Central Union is preparing to put the well down with a rotary. All three of the above wells are well north of the producing field.

The West Huasna Oil Company has moved its rig from the Huasna district to the southwestern part of the Santa Maria field, on the northeast corner of the Todos Santos ranch. The well is reported down about 1500 feet and in good shale formation.

The Foxen Oil Company, drilling on the Muscio property in Foxen Canyon, is down over 2000 feet. A good flow of gas was struck, but for several weeks there has been a string of tools lost in the well. These have been recovered, and the well is drilling again.

The General Oil Company is drilling a well on the southwest part of the Sisquoc ranch, almost directly north of the Foxen well. This well and the Foxen well are the two most easterly wells in the entire field.

The Santa Maria Oil Association was formed for the purpose of investigating and taking charge of all wells showing sufficient water to be considered a menace to the future of the whole field. It is composed of a member from nearly all the operating companies in the old field, and has four crews at work. Nearly all the work so far has been done on the Graciosa and Western Union properties, and has been quite successful. The danger to the field from a spread of the water has been practically eliminated, and several wells have been brought back to productiveness again. Most of the work has been done by cementing off the water-carrying formations.

The Associated Oil Company is hard at work on its new pipeline from the Palmer well to its main line at Carreaga. It is estimated that it will be in operation in July.

Shipments of crude oil for the month of May were about 750,000 barrels, and it is estimated that shipments in June will reach 800,000 barrels. There is a good feeling throughout the entire field, owing principally to the good prices offered for oil, and all the larger companies are running many strings of tools and fast developing their property.

COALINGA.

The Seneca Oil Company, section 12-20-14, is spudding in on well No. 1. Manager Ward will conduct the development work on this property much in the same manner as has made the Ward Oil Company a success. There will be four wells drilling as fast as a string of tools will do the work.

The Norse Oil Company, section 24-20-14, has brought in well No. 4, is making about 200 barrels; well No. 2 is 1055 feet deep, with 8-inch casing; well No. 3 is 780 feet deep, with 10-inch casing; rigs for well No. 5 and No. 6 are building.

The American Petroleum Company (Dcheney, et al.), section 30-20-15, is building the second rig, being on location No. 6. Tom Crumpton has been appointed superintendent of development on the west side.

The Devels Den Consolidated Oil Company, section 22-28-18, has shut off the water with the 5⅝-inch casing at about 1000 feet; will drill into the oil sand as far as they can carry the pipe before casing.

The Claremont Oil Company, section 4-20-15, is awaiting the arrival of the heavy 4½-inch casing, 25 pounds, ordered some months ago, upon the arrival work will be resumed on well No. 1.

Bud Spinks came to the field last week in his auto car. He will again get into the game. The attraction is alluring, and nearly irresistable in this field, with the possibilities.

The T. C. Oil Company (Wm. Graham), section 6-21-15, has well No. 1 on the pump, the flow of oil has not met the expectations of Graham, the gas and sand are bothering.

The Ozak Oil Company, section 26-20-14, has met with success with the wire-woven-perforated casing in well No. 2, the production is very satisfactory.

The men in the field have found the local bank a very convenient place for their earnings; a number of the boys have been surprised at their fat bank accounts.

Last Wednesday there were 45 oil cars on the siding at Ora waiting for their load of oil. The railroad company is moving a large amount of oil cars over this line.

The Circle Oil Company, section 35-20-14, has received a car of stovepipe casing and is now putting it in.

The Los Angeles companies on section 24-20-14 have a very complete electric plant that is furnishing a superior light.

The California and New York Oil Companies (P. M. D. & O. lease), section 12-20-14, has cleaned out well No. 2; it is showing up fine.

The Porter & Scribner lease, section 7-20-15, has a rig built for well No. 4; this well will be drilled by a rotary rig.

The Coalinga Pacific Oil & Gas Company, section 7-20-15, is drilling on well No. 5, about 1400 feet deep.

Advancement in Coalinga Town.

Another important step in the oil business is the consolidation of the interests of the Union Oil Tool Company, with Ed. Double and the American Foundry & Engineering Company, into what is now known as the Union Tool Company, capitalization $1,200,000.

Blue print of the plans that have been accepted for the enlargement of the plant are shown in the office of J. F. Lucey. The new company will make every known oil well tool used in the formation of California, being made here by men familiar with the wants of the oil men, will be an advantage to the operator. Ed. Double has been elected president and general manager, a recognition of a man's worth who has worked his way up from a mechanic in the employ of the Union Oil Tool Company's shop at Santa Paula, through all of the stages of the oil well tool manufacturing branch of the business Mr. Double is the inventor of the Double underreamer that today is the peer of all under-reamers made for the formation in this field. He also invented the ideal rig irons that are growing in favor with oil men.

Miss Nettie Hefton, the popular postmistress, has received official notice that this office has been raised to a second-class office, to take effect soon after July 1, 1908. As a second-class office the postmistress will be entitled to one assistant, two clerks and a janitor, these will be appointed under the Civil Service Commission. It will be necessary to re-arrange the interior of the office to accommodate the increased clerical force, and also, to so arrange the lock box space that they may install about 100 more lock boxes, as there is now on file about 50 applications for lock boxes that cannot now be accommodated. Monday of last week was one of the best days in the money order department that this office has experienced. There was issued in the several amounts up to 5 p. m. a total of over $1,300, which indicates the rapid growth of the field and town. The Bank of Coalinga acts as depository for the office, taking the receipts as late as 4 p. m., which is an additional security for the funds gathered from this community.

The Pleasant Valley Water Company is making good progress with the laying of the pipeline into town from the West Coalinga Oil Company's water well, which is about completed. The company has one of the tanks installed and will have the second tank in place in a few days. The riffle, or aerating device, is a very creditable piece of work, consisting of some 60 steps, each with a foot fall, over which the water flows in a thin sheet, the entire fall is 60 feet, the water breaking allows the sulphur and gas to escape, and will no doubt do all that is expected of it to do.

A grave question has confronted us, a suitable site for a cemetery. A representative of the Southern Pacific Company called upon the Trustees one day last week in answer to a request for some land for this purpose. Mayor A. P. May took the railroad man out to the site selected by the Trustees, being on a rise of ground on section 9-21-15. The inspector was satisfied with the location and promised to do all he could to assist the board in securing the five acres asked for.

It is rumored that Coalinga is to have a new addition to the depot, new accommodations for the traveling public, and that the freight depot will be enlarged to accommodate the increasing business of the city and field. There have been several calls from the officials of the Southern Pacific of late, but always in their private cars. The improvement contemplated will be appreciated when completed.

J. M. Pike, of the Tynon Hotel, Merced, visited Coalinga and the field last week. He examined the plans of the proposed new hotel and talked with the promoters with a view of possibly taking hold of the proposition. This was Mr. Pike's first visit to this town and the field. He was well impressed with what he saw and with the field, and the great possibilities.

Doctor S. Harry McCommon has joined the band of benedicts. The young lady who will guide the genial doctor through the meshes of domestic bliss is the charming daughter of Mr. and Mrs. C. E. Taylor of Los Angeles.

SOUTHERN FIELDS

The activity in all the southern fields of the State has never been so marked probably in the history of the industry and operations seem to be limited only by the inability to secure material. Every well that will produce is being pumped to its capacity. Every pipeline is operated to its limit and every oil car that can be got into service is doing duty. Not only this. The Union Oil Company and the Associated Oil Company are both making preparations to use southern oil in some of their northern and foreign contracts. The Union has already within the past 60 days shipped two cargos from San Pedro, and a representative of the Associated last week visited Redondo with a view to making that its shipping point.

All this is occasioned by the tremendous increase in the output of the Salt Lake or Los Angeles field. A year ago no one would have thought that either the extent of the territory or the output would ever equal what it is today, and the limits are not yet reached.

And yet as great as is the present output of the southern fields, and notwithstanding the great rush of new work, there seems to be no fear the market will be flooded. The immense demands which have been permanently established, indeed, cause a fear that the supply will not be adequate, and the present apparent overproduction in the south does not trouble anyone—least of all the oil operator.

Los Angeles.

As stated above, the limits of this wonderful field do not yet seem to be reached. Every well drilled to the north and west seems to extend it by just the distance that well is located in advance. It might be said the well of the Northwest Oil Company, a prospect hole, being drilled about one mile northwest of the town of Sherman, in the Santa Monica range, seems to have determined matters in that direction, as the well is reported to have struck granite at 700 feet. According to oil men, this settles the question of oil here, as the oil measures are of a later geological formation than the granites. Hereafter the prospector will no doubt keep away from the hills in this district.

In other directions, however, profitable results have followed drilling. The Associated Oil Company now seems to be in the van with developments, and during the past month has extended the productive area at least a mile west from Sherman Junction in its strike on a prospect hole drilled there. This well was reported as a 4000-barrel gusher, and some of the local papers had the ranch floating away in the oil that gushed from the well. The fact of the matter is about 90 per cent of the flow was water. There is a tremendous gas pressure and no doubt considerable oil, but, unfortunately, the water was either not shut off or the drill penetrated a lower stratum of water, and as the well now stands cannot be said to be a howling success. It is said the water will be shut off at once. Whether it is successful or not, the territory has been demonstrated as "good," and more wells will be drilled at once. This well is 2800 feet deep, 1000 feet deeper than those a mile east at Sherman Junction.

Considerable excitement has been caused at Sawtelle, about six miles in advance of the above-mentioned developments, where Clampett Brothers and Moon are drilling a well. The hole is now 1700 feet deep and reported as "looking good." It at least looks good enough to start a little boom on land, and everything within two miles of the well has been picked up, and lease men and others are hunting for more.

There seems to be a feeling, in short, that the Los Angeles field will be extended along the southern slope of the Santa Monica range, clear to the ocean, and thousands of acres are now being held awaiting developments.

At Sherman Junction things are especially lively and the Associated, Union, American Petroleum and McDor companies seem to be in a mad race to see which can puncture the earth with the most holes. They have succeeded in the order named. This is only 1800-foot stuff at this point, and the wells are very prolific. The American Petroleum Company has made a record here to be proud of. Only about six months ago Mr. Doheny secured the lease on the 83-acre Niles property and got busy. The company now has five producing wells and last month completed a contract with the Associated Oil Company to furnish the latter 2000 barrels of oil per day at 60 cents per barrel. That is what they call "going some," but the president of this concern is E. L. Doheny, and that explains a whole lot.

The McDor No. 1 struck the sand at 1700 feet and was perforated, but did not show up as well as expected and was drilled 200 feet deeper. It will probably make a 200-barrel well.

The Associated Oil Company has recommenced operations in the far eastern section of the territory toward the old city field, and is running several strings and has four new rigs up. The drilling here is only 1200 to 1400 feet deep, and wells are finished up in comparatively short time. This seems to indicate that the Associated wants more oil and "wants it quick." There are 35 strings of tools running and the output of the Los Angeles field at present is probably about 15,000 barrels per day. Most of it is marketed. The Union Oil Company may be storing a small amount, pending the completion of its pipeline from the field to the city. The pipe has been strung part of the distance for some time, but none has yet been laid.

The Salt Lake Railway just closed a contract with the Associated Oil Company whereby the latter supplies the railroad 2000 barrels per day at a reported price of 70 cents per barrel. The contract is to run for two years. This means an outlay in that time by the railroad of over $1,000,000 for fuel, and yet they say the Salt Lake road has turned down several excellent offers of oil property because "the price was too high." This is true. Oil can be produced in most of the California fields at from 10 to 15 cents per barrel.* That is some less than 70 cents, but as we are not the spiritual advisers of the Salt Lake Railway, we will drop the subject.

*Editor's Note.—We do not agree with our correspondent as to the cost at which oil can be produced; but accord to him the right of expression of his own opinion.

Fullerton.

As lively as any of them, and perhaps more so, about describes conditions here. This field as a "comer" is shown by the desire of the Associated Oil Company to get a foothold here. It is said this concern already has a right of way from seaboard and Los Angeles to this field and is making a strong bid for production on contract —having made an offer of 70 cents per barrel for about 2500 barrels per day. In this field they come into direct competition with the Union Oil Company, which for years has practically had control of the output. Some of the large concerns in the field are encouraging competition and some are content to let the Union

continue to market the output. The pipeage rate of 10 cents per barrel charged by the Union is, however, a "sticker" for some of the producers who think a strong competitor in the field might result in a lowering of pipeage charge.

This field is now practically developed from Olinda, the eastern terminus, to Brea canyon, and several companies operating west of Brea canyon practically connect it with the old Puente field. The Union is one of the heaviest operators in the district and is running six strings of tools. The company is devoting most of its energies to a large tract lying along the foothills, midway between Brea canyon and Olinda, and securing excellent results, one well being brought in last month which is producing 700 barrels per day. The Columbia Oil Producing Company is also getting some good wells and has commenced drilling on the south line adjacent to the C. V. Hall property.

Graham and Loftus are still drilling on their test well on their tract, one-half mile south of developed territory. It is said indications are excellent for a strike, and should one be made the Fullerton field would immediately rank as one of the five large fields in the State. An immense amount of territory would be proven up, and field operations would, without doubt, be increased to double that now going on. This is the well that is being watched and the one that, when completed, will tell a big story. It is said to be 2100 feet deep now, but the owners do not anticipate the sand at less than 3000 feet.

The Orange Oil Company's No. 1, at the western limits of the field, has settled down to a good 200-barrel producer of light refining oil, and the company is making preparations to drill two more wells at once.

There are in the entire field about 32 strings of tools running, and the output is 7500 barrels per day. None is going into storage and all is marketed at prices ranging from 50 to 75 cents on contract.

Whittier.

There is nothing new to report respecting this field. It is attracting little attention among oil men outside of those operating there, and is not much of a factor in the market. There are only eight companies operating there, and not all of these are doing new work. There are ten strings of tools running, of which the Central Oil Company is operating four. The output is probably about 2300 barrels per day. All the oil is under contract and brings an average of 75 cents per barrel.

KERN COUNTY.

The development of increased production of oil in the Kern River field goes steadily on, and each month sees the production increased slightly over that of the preceding month.

The Junction Oil Co. has completed an entire new boiler plant and some time during the next few months will drill several new wells to increase its present production of heavy oil. All the territory on the extreme southern edge of the field, where the Junction property is located, produces an oil of heavier gravity than those properties in northern and western portions of the field. At present this company has no tools at work on new wells, but is pumping the wells that have been completed for some time.

The California Kern Oil Co. has completed one new well and has commenced drilling operations on the second new well to be drilled during the last three years. D. A. Mack, superintendent of this property, is at present in Pittsburg attending a meeting of the board of directors. Upon his return to the property it is expected this company will begin extensive development of its territory.

Section Five Oil Co., under the management of E. B. Campbell of the King Refining Co., has finished one new well and has the derrick up preparatory to beginning work on the second.

The Associated Supply Co., taking the place of the Bakersfield Iron Works supply store at Oil Center, is making extensive changes in the supply business at that place and contemplate installing large pipe yards and warehouses on the property formerly occupied by the Bakersfield Iron Works and store yards of the Associated Oil Co.

Within the last few weeks the Peerless Oil Co. has installed and has in successful operation an air compressor which has succeeded in pumping all the water from wells that formerly produced water only, and in addition to the water exhausted produce from 100 to 150 bbls. of oil daily. This innovation may be the means of successfully combating the water problem, which has for a long time been a serious menace to the Kern River field. It has always been found necessary to keep those wells producing only water, or water and a small proportion of oil, going all the time in order to save other wells from going to water. With the successful operation of the Peerless air compressor it is hoped that many wells on the Peerless, Monte Cristo, and Kern lease of the Associated, that have been valueless for oil for several years, may, with this aid, be exhausted of water and brought to producing a profitable amount of oil, in addition to stopping the spread of the evil which has been slowly extending over the field during the past four years. Every year has seen a number of good oil wells go to water.

Extensive work is going on in the northern edge of the field, which was not fully exploited during the period of low priced oil. Several companies contemplate operating on territory that has not been touched since the boom days of five and six years ago. Wells drilled during that period have never reached a sufficient depth to show positively whether the trend of the field was in that direction or not. It is the opinion of the most experienced oil men that the field of Kern River will be extended to the north, and when the proper trend of the field is located the Kern River field will extend north, northeast, or northwest in the same way that Coalinga has been extended, and the lighter oil at a greater depth will be found.

The Walker & Heck Oil Co. has an old well pumping on the northeast quarter of section 30, and has completed a boiler plant. The company has derricks up and material on the ground preparatory to commencing operations on the property.

The Mecca Oil Co. has a line of derricks on the eastern line of its property, and future work is along the line of developing the eastern line of the same.

The Only Oil Co., on the extreme northeastern edge of the field, has the old wells of the British California Oil Co. cleaned out and put on the pump, and at the present time has a fair, though small, production out of the property.

The Jastro St. Clair property, on section 6, has its new well on the pump with a fair production, and is now drilling on the second new well of this property.

The Associated rifled pipeline is pumping steadily with the few shut-downs on the line. This line is pumping 17,000 to 18,000 bbls. per day, which is more than double the amount ever pumped through this sized line from the Kern River field. This amount is pumped through the line with stations 28 miles apart instead of only 14, as are those of the Standard Oil Co.'s line.

New wells are drilling in the field to the number of forty, the greater number of which are on property of the Associated Oil Co.; the balance scattered over the field. Very few of the companies are operating more than one string of tools on new wells.

Production for the month of May averaged some over 34,000 bbls. per day, of which approximately 7,000 per day has gone into storage and the balance shipped directly out to the consumers or taken by the railroads for their own use.

Sunset.

At Sunset the extensive development work is still going ahead, and would be still greater if not for the ever-present handicap of insufficient water for the needs of the drilling wells in that section.

The United Crude Oil Co. is drilling on one new well and has derrick completed for another, on which the drilling crew will commence operations as soon as the present well is finished.

The Ruby Oil Co. is working on its first well, completion of which is expected within the next few days.

The Monte Cristo has two wells completed, and has the derricks up for two more, on its property, which is on the flat just at the end of the present Maricopa extension of the Sunset railroad.

The New Center Oil Co. during the month brought in another well, which has been flowing since its completion at the rate of between 300 and 400 bbls. per day.

The Fulton Oil Co. is drilling on the line of wells it has derricks completed for on the southern line of its property. The Fulton has also finished installing an air compressor, which bids fair to give the same satisfaction and results as the one just installed on the Peerless property in the Kern River field.

The Graham Oil Co., a new company formed and started by W. H. Graham of Fresno, has commenced operations on the southeast quarter of section one. This quarter adjoins the large wells of Walter Snook, and those of the Fulton Oil Co., now being drilled on their line. This company confidently expects large wells on this section of the field, and by the bringing in such wells extend the field some to the east of the present productive territory.

The Western Consolidated Oil Co., on section seven, having reached a depth of 1000 ft., has been forced to shut down until a more plentiful supply of water can be secured. It is not expected to reach the oil sand in this territory under a depth of from 1700 to 2000 feet, but it is the opinion of the majority of experienced operators that the successful drilling of this well to such a depth will result in a lighter gravity of oil being found and also in greater quantities than in the shallower wells.

The Sunset Monarch Oil Co. is pumping the old well of the American Girl Oil Co., on section 7, and the well is producing oil of a gravity above 16°, which is much lighter than that of any well in that section of the field. This company has one well drilling on this property and the derrick up and completed for the third well. When the well now being drilled is completed and put on the pump it will in a great measure show whether the light oil strata was overlooked in the early drilling of the Sunset field proper.

The Topaz Oil Co., operating in the same neighborhood, is having preliminary work done before beginning active operations in this part of the field, within the next thirty days they expect to have one well started on their property.

Midway.

The extension of the railroad to Midway is steadily being prosecuted, and is now within a few miles of the proposed depot on section thirteen, in the Midway field proper. When this road is completed it will give the operators in the Midway a great advantage in having means of transportation at their very door in place of having to haul all their material from Sunset or McKittrick; a haul in either instance of 16 or 17 miles.

The great trouble in development of the Midway field is the shortage of water, and at present time practically the entire field is shut down on this account. The Oregon Midway Oil & Water Co. has promised to supply the operators with plenty of water, but pending the installating of an air compressor, and its subsequent breakdown, the field has been tied up for the past week or ten days. H. A. Blodgett of the Sunset Road Oil Co. promises to relieve the shortage of water to the extent of 2000 or 3000 bbls. daily, but this amount will not be nearly enough to supply the demand. The operators of the Midway have under consideration propositions both from the Spreckels interests and the Kern County Land Co. to supply the field with a sufficiency of water for all their needs, but at this date no definite conclusion has been reached which proposition, if either, will be taken up.

The operations of the Big Four Oil Co., on section 30, go steadily on, and it is confidently expected that oil will be found, although at a greater depth than in the field which has been drilled west of section thirty.

Much interest has been aroused by the publishing of statements that the Standard Oil Co. is furnishing the Big Four Oil Co. with both funds and water to continue the development of its lands in the Midway district. This question has been argued both pro and con in the newspapers, but the idea seems general that such is the fact. For the big corporation to go to such lengths in securing a production of oil in the Midway district shows both its faith in the largeness of the field and the quality of oil to be secured, and incidentally that the Standard expects, and is preparing for, a shortage of oil in the markets of the West.

The Know Oil Co. is reported to have struck a strata of very light oil in its well in the Midway, the oil being of a gravity of 30°. On account of the well being shut down for the past two weeks for want of water and small casing, no definite information as to what quantity of oil has been found is available, but if the report is true, it bears out the contention of many oil men that there is a strata of light oil under the Midway field at a greater depth than wells have heretofore been drilled.

J. A. Stroud, on section 15, in the Midway, has struck the oil sand in his well. Of what quantity and gravity of oil the well is good for has not yet been ascertained.

The Gipsy Oil Co. still continues to secure a good production out of the wells it now has completed, and the development work on both the Gipsy and Mountain Girl Oil companies goes steadily on.

The Midway Crude Oil Co., a new corporation operating on section 31, has reached a depth of 300 feet. Superintendent Scott of this company does not expect to reach the oil sand under about 1200 feet.

McKittrick.

In McKittrick the principal development is in the north end, and the old McKittrick field is being steadily extended until there is no doubt in the minds of operators that it is only a question of time until the McKittrick field is extended through to the Temblor district.

The Temblor district has no producing wells although several wells are drilling, the deepest of which the Springfield is down about 1400 feet.

The C. J. Oil Co. has one string of tools running and material on the ground for five or six more wells, which will be completed before the first of January.

Visitors to the McKittrick field are astonished at the extent of development work done during the past six months. When it is considered that every well brought in has not only furnished new production, but has extended the field every time from one-fourth to one-half mile and proven good oil territory that five years ago was condemned as worthless, they have good cause for astonishment, and congratulations to McKittrick field during its years of low prices and stagnant development.

The shipments of oil from McKittrick will aggregate 175,000 bbls. per month, and if the present rate of increase in production keeps up by the first of January the output will be more than double that of January a year previous. Thirty strings of tools are running in the field on strictly new work, and in more than one-half in territory that has not been absolutely proven.

EASTERN MONTEREY.

In a recent trip across from King City in the Salinas Valley, to Coalinga, in the San Joaquin, the California Derrick correspondent had occasion to stop and investigate the new drilling at the Lone Oak well. The Standard Oil Company has bought extensive oil rights along this same anticline, beginning from this point southerly through the Peach Tree district, to near Parkfield, in eastern Monterey county. The Standard has ten rigs up, five of which are being drilled, so that the field will be rapidly developed.

In going over the Parkfield end of this district there may be noticed a continuous granite intrusion that forms the middle ridge between the Salinas river and the high Coast range. What kind of an oil field this will develop into is still difficult to surmise; the Standard oil field men thought that oil would be found reasonably shallow, but this will evidently not be so. The field will be as deep as the Santa Maria field, if not deeper.

The first best test of the field will be had at the Lone Oak well, where Herron Brothers are drilling—very efficient drillers and well known in the Santa Maria field. They are down with a straight hole full 2300 feet in shale, but as yet have only the first slight showings of oil. They have selected as favorable a location as the field offers, far enough away from the granite intrusion, and near enough to a sand break on the other side with shale hills all about them.

ASSOCIATED SUPPLY COMPANY.

The Associated Supply Co., whose incorporation is noted in this issue of the Derrick, is a half million dollar concern that proposes to carry in stock everything in the supply line that is requisite to the oil business. The company will have stores at the base of operations in the various oilfields; and promises to have within thirty days as large a stock of goods on hand as may be found anywhere on the Pacific Coast, to be sold at prices as low as consistent with economic handling. A large policy will be adopted in the company's credit system, allowing a producer all the credit that his proposition will carry. The company will operate the stores of the Bakersfield Iron Works, stores at Oil City, McKittrick, Coalinga, Los Alamos, and eventually will have stores also in San Francisco and near Los Angeles. The home office is Wells Fargo building, San Francisco. F. E. Clohan is the general manager, and W. S. Porter president. The full complement of officers and directors appears in the notice of incorporation.

NEW OIL COMPANY INCORPORATIONS.

Associated Supply Co., capital stock $500,000 in 5000 shares, each director subscribing 5 shares of $100 par value each; the business of the company is to operate stores for the handling of oilwell supplies, at Bakersfield, Oil City, McKittrick, Coalinga, Los Alamas, Los Angeles and San Francisco. Directors: W. S. Porter (president), O. Scribner (vice-president), F. H. Buck, J. A. Chanselor, F. E. Clohan; secretary, C. E. Carson; general manager, F. E. Clohan. Home office San Francisco, Wells Fargo building.

Daisy Oil Co., capital stock $500,000; incorporated by F. E. Horton and A. A. Busey of Oakland and W. J. Rhoads, Jr., of Stockton. Place of business, Oakland.

The Black Canyon Oil Co.; capital stock $1,000,000; incorporated by W. H. Pabst, C. Withers, C. A. Davis, J. B. Batz, A. F. Rodgers, C. A. Slack and J. H. Jordan. Place of business, San Francisco.

The Babcock Petroleum Co.; capital stock $1,000,000; incorporated by F. W. Babcock of Providence, R. I., E. E. Powers, W. H. S. Welch, L. R. Powers and F. N. Notman, all of Los Angeles. Place of business, Los Angeles.

Planet Oil Co.; capital stock $25,000, of which $300 was subscribed by P. Whiting, W. H. Mead and A. R. Townsend. Place of business, Los Angeles.

Everett Oil Co. of Fresno; capital stock $100,000; subscriptions $60,000, by W. H. Graham, $16,000; Louis Scholler, $16,000; J. R. McKay, $16,000; C. H. Adair and G. W. Cartwright, $8000 each.

Central Union Oil Co.; capital stock $1,000,000 (under the laws of Arizona). Place of business, Santa Barbara.

LATEST OIL STOCK REPORTS.

San Francisco Quotations.

Following are the latest quotations for California oil stocks listed on the California Stock and Oil Exchange:

	Bid.	Asked.		Bid.	Asked.
Alma	.20	....	Nevada County	....	.60
Asso. Oil Tr. Cer.	26.75	....	Occidental	.18	....
Asso. Bonds, 5s	77.50	....	Peerless	3.00	3.50
Brookshire	1.50	1.80	Pinal	....	17.00
Caribou	10.50	15.00	Reed Crude	.17	....
Chicago Crude	.05	.06	Rice Ranch	....	1.00
Claremont	1.20	1.37½	S. F. & McKittrick	10.00	11.00
Esperanza	1.05	1.50	Shawmut	.50	.60
Four	.14	.16	Sterling	....	2.40
Graciosa	.30	....	Sunset Monarch	.28	....
Illinois Crude	....	1.00	Superior	.10	.15
Imperial	18.25	30.00	Thirty-Three	....	4.00
Independence	.23	....	Union	223.00	229.00
Junction	.40	.46	Wabash	1.40	....
Kern	.10	.12	West Shore	2.65	....
Kern River	5.25	7.00	Wolverine	.29	.35
Linda Vista	.30	....	W. K. Oil Co	.25	....
McKittrick	....	.22	Western Union	....	100.00
Monte Cristo	.75	.90			

Los Angeles Quotations.

Following are the latest quotations for oil stocks listed on the Los Angeles Stock Exchange:

	Bid.	Asked.		Bid.	Asked.
Amalgamated Oil	62.00	85.00	New Pa. Pet. Co.	.50	.85
Associated Oil	27.12½	27.75	Pinal Oil Co	....	18.00
Brookshire Oil	1.60	2.00	Olinda Oil Co	.07¾	.14
Central	.88½	1.00	Piru Oil & L. Co.	.13	.17
Columbia	.70	.84	Reed Crude	.13	.35
Continental	.21	.26	Rice Ranch Oil Co.	....	.95
Elk Con. Oil Co.	.03½	.09⅛	Union	223.00	228.00
Fullerton Oil	.40	.70	Union Prov. Co.	218.00	228.50
Globe	.12½	.14	United Petroleum	380.00	440.00
Mexican Pet.	1.20	1.37	Western Union	80.00	110.00

Recorded by
San Francisco Marine Exchange
and the
United States Government

U. S S. WYOMING REMODELED FOR OIL FUEL.

The Coast Defense Monitor Wyoming, now at Mare Island, is ready for the trial trip to test the efficiency of the oil fuel plant that has just been installed. The ship is fitted with the S. & P. self-cleaning automatic oil gas burners, systems and strainers, and with air compressor for air atomizing of the oil, and steam connections for steam atomizing of the oil. The boiler is a Babcock & Wilcox water-tube boiler of 2500 H-P. The Wyoming is of 3225 tons displacement, 250 feet length, 50 feet beam, and mean draft 12.5 feet, carrying 6 guns of 4 inches and over, 13 guns under 4 inches. The date for the trial trip for testing the oil-burning plant and boiler has not been given out. The test will determine the operative capacity of the boiler, and the per cent gained in the efficiency of the boiler operated with oil fuel as compared with the efficiency when operated with coal fuel; the test will determine also the difference in the amount of steam and air used for atomizing the oil. The economy of oil fuel and speed are also part of the purposes of the trial trip, and it is probable that if the results of these tests are satisfactory other ships of the United States Navy will be fitted for the use of oil fuel. The oil-burning plant was built by Staples & Pfeiffer, San Francisco, and was installed under the direct supervision of Mr. Fred. Ingram, machinist, and under the general supervision of Commander Carr of the Steam Engineering department at Mare Island.

STEAMSHIP DAISY FITTED FOR OIL FUEL.

The trial trip of the Steamship Daisy, Captain H. B. Smith, owned by the Freeman Steamship Co., San Francisco, was run June 23 up the California City coast, between San Francisco and San Quentin. The Daisy is a lumber steamer, built at Bandon, Oregon, by J. Howard Price; length 175 feet, beam 38.7 feet, depth 14 feet, tonnage 379 tons net. The ship is fitted with a 500 H-P Babcock & Wilcox water-tube boiler, and S. & P. automatic oil gas burner and steam atomizer. The boiler and oilburner plant was installed by the United Engineering Works, Alameda, the installation being accomplished in 25 working days, under the supervision of Mr. G. M. Merriman, engineer for the U. E. W. The oil tanks have a capacity of about 620 bbls., sufficient for the round trip between San Francisco and Willapa, distance of about 500 miles. Chief Engineer W. G. Perow stated on returning from the trial trip that the ship could not have behaved better, and that the trial test lasting five hours was perfectly satisfactory. No test of speed was attempted, but he was satisfied that the requisite and sufficient speed will be attained. The Daisy will make her maiden voyage, returning to San Francisco about July 8, when an account of her performance will be secured by the California Derrick for publication in the July issue.

There are other installations in hand by the various oilburner builders that will soon be made. Among them is the Steamer Schome owned by Hatch Brothers.

The Br. tank steamer Pinna, 4267 tons, under charter by the Toyo Kisen Kaisha will carry a full cargo of refined oil from Gaviota to Yokohama.

The Associated Oil Co.'s tank steamer W. S. Porter made the first voyage of the present season to Alaska in June, with a cargo of fuel oil and gasolene.

The river steamer Dover carried 1100 bbls. fuel oil from Sacramento in June to the Thor and Sierra dredgers on the Feather river, which are constructing the levees for the Bull & Henderson reclamation district.

The Security Oil Co. of Texas has recently added some new tank vessels for its coast trade.

Exports and Shipments of Mineral Oil in April, 1908

CUSTOMS DISTRICTS	CRUDE OIL		NAPHTHAS, ETC.		ILLUMINATING		LUBRICATING		RESIDUUM	
Pacific Exports from	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Alaska			120	36	700	168	53	19		
Hawaii			20	7			10	6		
Los Angeles	1,974,000	47,000								
Puget Sound	210	20	29,004	2,374	8,374	1,233	27,977	2,937	5,064	276
San Diego					490	94	123	30	1,932	191
San Francisco	1,806,000	25,800	7,462	1,445	1,245,340	101,820	28,695	8,477		
TOTAL	3,780,210	72,820	36,606	3,862	1,254,904	103,315	56,858	11,469	6,996	467
Shipments to Alaska—										
From Oregon			2,098	312	4,706	659	886	200		
Puget Sound	13,740	1,421	70,144	8,839	13,014	2,250	9,145	2,698		
San Francisco			36,820	3,488	90,151	7,052	4,222	1,157		
Willamette					4,432	909	164	75		
Shipments to Hawaii—										
From Puget Sound	141,750	6,750								
San Francisco	2,688,000	46,500	25,800	2,698	141,600	25,824	9,880	4,559		
Eastern Exports from										
Baltimore	1,082,247	43,290	636	77	413	64	514,600	75,037		
Boston and Charleston			4,850	679	82,753	10,514	11,069	2,015		
New York	4,010,195	254,130	2,231,385	259,140	53,237,650	4,149,244	7,974,546	1,148,288	50,000	3,350
Philadelphia	313,700	36,686	2,785,393	238,392	30,511,962	1,932,339	4,236,735	465,927	427,491	15,232
Galveston	4,956	216					500	215		
Sabine (a)	149,870	16,111	2,850	477	3,807,192	183,439	13,810	1,847	156,450	9,313
Total	5,560,968	350,433	5,025,114	498,765	87,639,970	6,275,600	12,751,260	1,693,329	633,941	27,895

CRUDE OIL RECEIPTS FROM CALIFORNIA OIL FIELDS

By Associated Oil Company at San Francisco.

1908.	Vessel.	From	No. Bbls.
May 16	Sch. Roderick Dhu	Monterey	17,000
20	Sch. Santiago	"	11,000
22	Sch. Roderick Dhu	"	17,000
29	Sch. Santiago	"	11,000
31	Sch. Santiago	"	11,000
June 5	Sch. Santiago	"	10,000
8	Sch. Santiago	"	11,000
11	Str. Rosecraus	"	23,000
15	Str. Rosecrans	"	22,000
	Total		133,000

By Union Oil Company at Oleum Refinery.

May 17	Str. Whittier	San Pedro	10,000
20	Str. Lansing	San Luis	45,000
21	Str. Santa Rita	"	45,000
24	Str. Santa Maria	"	40,000
26	Str. Roma	"	25,000
27	Bktn. Fullerton	"	15,000
31	Str. Roma	"	25,000
June 4	Str. Whittier	San Pedro	10,000
8	Str. Whittier	San Luis	11,000
9	Str. Santa Rita	"	50,000
11	Str. Whittier	"	12,000
14	Str. Santa Rita	"	45,000
	Total		331,000

By Standard Oil Company at Richmond Refinery.

May 28	Str. Asuncion	San Luis	22,000
June 3	Str. Atlas	"	20,000
5	Str. Maverick	Rondo	20,000
11	Str. Asuncion	San Luis	22,000
12	Str. Col. E. L. Drake	"	40,000
	Total		124,000
	Total Crude Oil Receipts		588,000

CRUDE OIL SHIPMENTS FROM CALIFORNIA FIELDS.

By Associated Oil Co. from Monterey Pipeline Station.

1908.	Vessel.	Shipped to	No. Bbls.
May 18	Str. W. S. Porter	Portland	55,000
June 2	Sch. Roderick Dhu	Eureka	17,000
4	Str. W. S. Porter	Nome	38,000
9	Shp. Marion Chilcott	Honolulu	15,000
	Total		125,000

By Union Oil Co. from San Luis Pipeline Station.

May 26	Str. Whittier	Eureka	10,000
30	Str. Santa Maria	Aneon	45,000
June 8	Str. Roma	Portland	25,000
13	Str. Whittier	San Diego	10,000
	Total		90,000

By Coast Oil Co. from Gaviota.

May 27	Br. Str. Soyo Maru	Yokohama	50,000

By Miscellaneous from San Pedro.

May 21	Str. Whittier	San Diego	10,000
	Total		275,000

DISTILLATE AND FUEL OIL SHIPMENTS.

By Standard Oil Co. from Richmond Refinery.

1908.	Vessel.	Shipped to	No. Bbls.
May 16	Str. Col. E. L. Drake	Seattle	40,000
18	Str. Asuncion	Astoria	22,000
30	Str. Asuncion	Portland	22,000
30	Str. Col. E. L. Drake	Seattle	40,000
June 5	Str. Atlas	Seattle	20,000
	Total		124,000

By Union Oil Co. from Oleum Refinery.

May 27	Str. Argyle	Portland	25,000
	Grand Total (barrels)		149,000

By Associated Oil Co.

June 9	Str. Marion Chilcott	Honolulu (drums)	150
4	Str. W. S. Porter	Nome (drums)	350

By Miscellaneous Shippers from San Francisco.

May 28	Brk. Olympic	Honolulu (drums)	150
June 2	Str. Columbian	" "	57
	Total (drums)		707
	Total Fuel and Distillate in Barrels and Drums		149,707

REFINED OIL SHIPMENTS FROM REFINERIES

By Standard Oil Co. from Richmond Refinery.

1908.	Vessel.	Shipped to	No. Gals.
May 16	Str. Maverick	Seattle	1,000,000
18	Br. Str. Tonowanda	Mororan (for order)	1,230,000
25	Str. Atlas	Portland	1,000,000
27	Br. Str. Tuscarora	China ports	2,215,000
June 8	Str. Maverick	Seattle	1,000,000
8	Br. Str. Winnebago	China ports	1,900,000
8	Br. Brk. Daylight	Yokkaichi (in cases)	1,540,000
15	Br. Brk. Calcutta	Tsingtau	858,805
	Total		10,743,805

By Union Oil Co. from Oleum Refinery.

May 18	Str. Argyll	Seattle	1,250,000
23	Str. Lansing	Callao and Taltal	1,750,000
June 6	Str. Argyll	Portland	1,250,000
	Total		4,250,000

By Associated Oil Co.

June 4	Str. W. S. Porter	Nome (gasoline)	25,000
9	Str. Marion Chilcott	Honolulu (gasoline)	5,000
	Total		30,000

By Miscellaneous Shippers from San Francisco.

May 19	Sch. H. C. Wright	Mahukona	2,500
16	Brk. Amy Turner	Honolulu	1,250
19	Br. Str. Boveric	Pacific Islands	370
20	Str. Virginian	Honolulu	13,500
22	Str. Newport	Central America	6,000
23	Str. Curacao	Mexico	500
23	Str. Alameda	Honolulu	3,500
28	Brk. Olympic	Honolulu	10,750
30	Brk. Andrew Welch	Honolulu	100,000
June 1	Str. San Jose	Central America	1,500
2	Str. Hilonian	Honolulu	2,000
2	Str. Columbian	Honolulu	10,500
2	Str. China	Japan	4,550
8	Fr. Str. Ceylan	Mexico	8,000
8	Str. President	Br. Columbia	3,050
8	Br. Str. Yeddo	New Zealand	4,800
10	Br. Str. Yeddo	Australia	4,000
13	Str. Alameda	Honolulu	1,550
	Total Miscellaneous		175,120
	Total Refined Oil Shipments		15,198,925

SOME NEW FOREIGN OIL-BURNING VESSELS.

The Petroleum Review of London gives the following account of the trial trip, and the dimensions of the screw tug Eduardo, built to the order of the Anglo-Chilian Nitrate and Railway Co., Ltd., for the port of Tocopilla. The vessel is of the following dimensions: Length 55 feet, beam 11 feet 6 inches, depth (moulded) 6 feet 6 inches, draught 4 feet 6 inches, and is fitted with compound engines 8½ inches by 18 inches by 12-inch stroke, supplied with steam by a dry back boiler working at a pressure of 140 lbs., and indicating 80 I H-P. She is fitted out for burning both coal and oil fuel, or the two combined, arranged on the Kermode system, and has sufficient oil storage to run for about two and a half days. The vessel is specially equipped with salvage apparatus, including a pulsometer pump capable of pumping 10,000 gallons per hour. A speed of nearly eight and a half miles per hour was easily obtained. The vessel was built by Messrs. A. Rutherford & Co., Birkenhead, and designed and supervised by Messrs. Henry H. West & Son, Liverpool.

A Newcastle-on-Tyne report states that the tank steamer San Cristobal has been sold to Mexican owners. The vessel, which was built in 1906 by Sir W. G. Armstrong, Whitworth & Co., was formerly owned by Messrs. S. Pearson & Son, Ltd., of London. She is 2041 tons gross register, and is adapted for carrying petroleum in bulk and burning liquid fuel.

The following description of the new tank steamer Servia and her trial trip appears in the Petroleum World of London: The tank steamer Servia had a very successful trial trip on May 5. The speed for a six-hour trial, with over 7000 tons dead weight, was 11¼ knots. The steamer has engines amidships, and is constructed to carry her full dead weight of oil of any specific gravity and has large oil-tight bunkers of large capacity. The steamer has a large pumping installation, which is very complete and capable of dealing with 600 tons per hour. The builders are Sir Jas. Laing & Sons, the engines by Messrs. J. Dickinson & Sons, the owners being the Petroleum Steamship Company, and Messrs. Lane & Macandrew the managers.

REVIEW OF TECHNICAL BOOKS

Petroleum and Its Products.—Sir Boverton Redwood. Philadelphia: J. B. Lippincott Co. 2 vols.: $13.50 net. This valuable work, now in its second edition, is enlarged to 1064 pp., thoroughly revised, and so comprehensively edited that it meets the requirements of the professional and the practical reader alike. It is a compendious treatise on petroleum, natural gas, and ozokerite, including the history, geography, geology, physics and chemistry, uses, transportation, and legislation. It is a work that belongs in the school, the study, the library, and the laboratory. From the driller of a well to the consumer of petroleum products in industrial or marine operations, from the refinery to the dealer—for all who are interested in the subject, there is in Sir Boverton's Petroleum and Its Products a library of scientific, technical, statistical, and practical information of value unequalled by any other work of a similar character. Asphalt, and oil shale also occupy positions in the volumes, and transportation by water is made an important feature. Maps, diagrams, tables, and other illustrations, elucidate the text. In a word, the work is complete. Sir Boverton stands so high in the scientific life of the world that his authority is not only accepted, but unquestioned. Besides holding active membership in various scientific and technical societies, he is adviser respecting the petroleum industry to the Home office of the British Admiralty, and to the Corporation of London; and respecting petroleum transport he is an adviser to the Thames Conservancy.

Handbook on Petroleum, for Inspectors Under the Petroleum Acts.—Captain J. H. Thomson and Sir Boverton Redwood. Philadelphia: J. B. Lippincott Co. This is the second edition of a work that is invaluable to persons engaged in the storage, transport, distribution, and industrial use of petroleum and its products, and calcium carbide, with suggestions on the construction and use of mineral oil lamps. Captain Thomson is Chief Inspector of Explosives in the British kingdom and his colaborator is author of Petroleum and Its Products, and advisor to the British Admiralty. But the Handbook on Petroleum is not for Englishmen alone, nor are the contents confined to matters pertaining to Great Britain exclusively, but cover the various fields of the world. While the value of the work more directly applies to England, it is one that Americans particularly should study, with a view of improving legislation and industrial methods respecting the petroleum industry.

Petroleum and Natural Gas—Advance Chapter from Bulletin No. 340, Contributions to Economic Geology, 1907. Part I:—United States Geological Survey. This advance chapter contains reports of investigations of The Miner Ranch Oilfield, Contra Costa County, Cal., by Ralph Arnold;Petroleum in Southern Utah, by G. B. Richardson; Gas Fields of the Bighorn Basin, Wyo., by Chester W. Washburne; The LaBarge Oilfield, Central Uinta County, Wyo., by Alfred R. Schultz. The book contains also a list of the Geological Survey publications on Petroleum and Natural Gas, and on Asphalt. The feature of this advance chapter of Bulletin 340, so far as the California readers are concerned directly is the description of the Miner Ranch Oilfield, and Mr. Arnold's conclusions.

The Copper Handbook:—Horace J. Stevens. Houghton, Michigan: Horace J. Stevens, Pub., vol. 7, 1907. Mr. Stevens has presented in this volume of 1228 pp. a vast deal of scientific and technical information, and history of the copper industry, including: History, geology, chemistry and mineralogy, mining, milling and concentrating, hydrometallurgy, pyrometallurgy, electrometallurgy, alloys of copper, brands and grades, uses, deposits, and statistics, and a glossary of mining terms. The book is an entertainer, as well as an instructor. The Copper Handbook is an annual publication, and is devoted chiefly to a record of the copper deposits, active and idle, good, bad, and indifferent. The author may know in all cases that he is right, when he denounces companies and operators; but, in a book as valuable as The Copper Handbook should be, dignity and respect for the English language, even in the denunciation of alleged dishonesty, would not detract from the interest and information. The speech of yellow journalism should have no place in a publication of this sort. When Mr. Stevens is not mad, he writes like a scholar; otherwise—otherwise.

OIL MARKET ABROAD.

Russian Position.

During the month the market at Baku for crude petroleum and its various products has shown a certain amount of fluctuation, but the tendency has still remained a downward one. Crude oil for prompt delivery, which we last quoted at 26 copecks per pood, fell to 19½@20 copecks per pood, and then rose gradually to 23 copecks per pood free on rail Baku. Residuals for prompt delivery from a quotation of 23¾ copecks, touched as low as 23½ copecks, but have since recovered to 24 copecks per pood free on rail Baku. Kerosene for prompt delivery is now quoted at the same price as given in our last report, namely 28 copecks per pood free on rail Baku, although at one time it had fallen to 27 copecks per pood.

The market is still very quiet, with few buyers. The consequence is, stocks have accumulated at Baku, and this has naturally helped to depress the market.

The production for the whole month of April of crude petroleum from the Baku fields amounted to 38,462,000 poods. Of this quantity 16,460,408 poods were contributed during the first half of the month, so that the production of the latter half of the month was better than for the former. Compared with March, and allowing for the difference in the length of the two months, the production for April shows a slight increase.

English Market Report.

The month has been an uneventful one for the English petroleum market. Beyond the expected decrease in deliveries as the summer approaches, there is no change to record, prices having remained unchanged throughout the month, and deliveries normal for the time of year.

The quotations are as follows:

LONDON—Russian oil, 5⅜d. ex wharf in barrels; American oil, 6¼d. ex wharf in barrels.

LIVERPOOL—Russian oil, 5½d.@5¾d. ex wharf in barrels; American oil, 6¼d.@6½d. ex wharf in barrels.

Indian Market Report.

Only one slight change has taken place in the prices for petroleum lamp oils on the Indian markets. In Bombay, "Elephant" oil in tins, which was quoted at rupees 3. 13. 6., rose to rupees 3. 14. 0. Otherwise the prices throughout the Bombay, Karachi and Calcutta markets are unchanged. The deliveries have not been so good as for the previous month.

The quotations are as follows:

	Rupees.		
BOMBAY—			
American case oil	4.	12.	0.
Russian case oil	4.	8.	0.
"Elephant" oil in tins	3.	14.	0.
Sumatra "Rising Sun" in tins	3.	16.	0.
Burmah oil in bulk	2.	14.	0.
KARACHI—			
American case oil	4.	4.	0.
Burmah oil in tins	3.	8.	0.
Sumatra oil in bulk	3.	6.	0.
American oil in bulk	3.	5.	0.
CALCUTTA—			
American case oil	4.	10.	0.
Russian case oil	4.	4.	0.
Barmah oil in bulk	2.	14.	0.
Borneo oil in bulk	3.	0.	6.
Sumatra oil in bulk	3.	3.	6.
American oil in bulk	3.	3.	6.

RECENT PATENTS

The following patents recently granted of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, patent attorney, Park building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Tubular or drive well attachment, Geo. W. Stancliff, Houston, Tex., 887,138.

Pumping jack, Avery B. Bailey, Robinson, Ill., 887,572.

Well-drilling machinery, Harry R. Decker, Houston, Tex., 887,775.

Water-stop for deep wells, Harvy J. Newhouse, Yorkton, Ind., 887,836.

Middle ring for pipe couplings, Frank N. Smith, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 887,859.

Means for drilling wells, Jno. H. Milligan, San Bernardino, Cal., 887,952.

Stuffing box, Alfred G. Heggem, Coraopolis, Pa., assignor to Oil Well Supply Co., Pittsburg, 888,166.

Well-drilling machine, Jno. W. Teetsel, Urbana, Ill., 888,205.

Pumping apparatus for oil wells, Geo. L. Cusac, Findlay, Ohio, 888,316.

Miner's lamp, Wm. Tunnessen, Hazleton, Pa., 888,768.

Pipe and rod-lifting tongs, Oliver Wilson, St. Edward, Neb., 889,078.

Pumping jack, Jno. R. Ware, Osawatomie, Kas., 889,278.

Cager and automatic sump guard, Grant Holmes, Dansville, Ill., 889,307.

Apparatus for disintegrating fuel oil, Harry Luckenbach, San Francisco, Cal., 889,701.

Well-operating apparatus, James E. Wise, Butler, Pa., 883,769.

Well-tubing, Andrew Smith, San Mateo, Cal., 884,048.

Pipe-coupling, Solomon R. Dresser, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 884,371.

Electric fluid heater for wells, Mark T. Seymour, Bemus Point, and Alton W. Ball, Stowe, N. Y., 884,424.

Device for cleaning oil wells, Frank A. Monroe, Bemus Point, and Burton W. Seymour, Falconer, N. Y., 884,675.

Pipe coupling, Geo. W. Mason, Sharon, Pa., 884,749.

Grate for gas-producers, Robert Hilprecht, Lansing, Mich., assignor to Olds Gas Power Co., same place, 885,155.

Well-drilling apparatus, Chas. Milliron, Bartlesville, Okla., 885,170.

Apparatus for the production of gases from hydrocarbon, Willy Von Dulong, Witaschutz, Germany, 885,230.

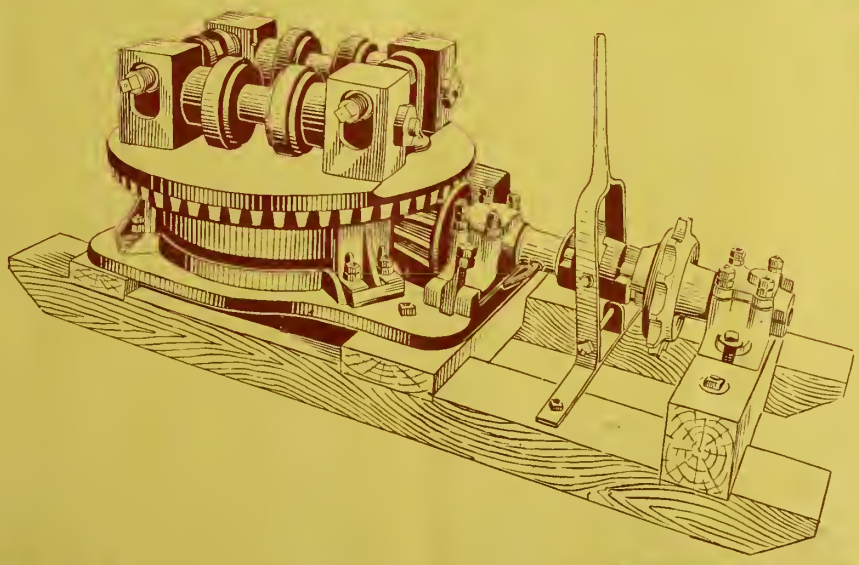
CALIFORNIA STATE

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., July, August, September, 1908 No. 5-6-7

PARKER



ROTARY.

OIL WELL SUPPLIES

SOUTHERN WELL WORKS COMPANY

BEAUMONT, TEXAS, U. S. A.

SOUTH CHESTER TUBE CO'S

GENUINE WROUGHT IRON

CASING *DRIVE PIPE*

OIL WELL TUBING

LINE PIPE

WOODS & HUDDART

SELLING AGENTS

356 MARKET STREET

SAN FRANCISCO

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., July, August, September, 1908 No. 5-6-7

PRODUCTION OF CALIFORNIA MINERALS IN 1907

By Lewis E. Aubury, State Mineralogist.

State Mineralogist Lewis E. Aubury has placed in the hands of the State Printer a complete report of the mineral production of California, by counties, in the year 1907, which will be issued for general distribution soon. The figures are based on the returns that have been made by producers, in response to inquiries sent to them on blanks. The total mineral output of California, last year, is announced to have been $55,697,949, or a gain in total value of $8,921,864 as compared with the grand total for 1906. Production by substances and by values is reported by the producers to have been as follows:

Asbestos, 70 tons	$ 3,500
Asphalt, 79,718 tons	1,058,400
Bituminous rock, 24,122 tons	72,835
Borax, 106,825,000 lbs.	1,200,913
Cement, 1,613,563 bbls.	2,585,577
Chrome, 302 tous	6,040
Clay-brick, 362,167 M	3,438,951
Clay-pottery, 160,385 tons	254,454
Coal, 23,734 tons	55,849
Copper, 32,602,945 lbs.	6,341,387
Fuller's earth, 100 tons	1,000
Gems	232,642
Gold, 809,213.52 ounces	16,727,928
Granite, 399,431 cu. ft.	373,376
Gypsum, 8,900 tons	57,700
Infusorial earth, 2,531 tons	28,948
Iron ore, 400 tons	400
Lead, 164 tons	16,690
Lime, 684,218 bbls.	756,376
Limestone, 230,985 tons	406,041
Macadam, 1,544,617 tons	1,082,302
Magnesite, 6,405 tons	57,720
Manganese, 1 ton	25
Marble, 37,512 cu. ft.	118,066
Mineral paint, 250 tons	1,720
Mineral water, 2,924,269 gals.	544,016
Natural gas, 169,991 cu. ft.	114,759
Paving blocks, 4,604 M	199,347
Petroleum, 40,311,171 bbls.	16,783,943
Platinum, 300.07 ounces	6,255
Pyrites, 82,270 tons	251,774
Quartz crystals, 4,000 lbs.	10,000
Quicksilver, 17,379 flasks	663,178
Rubble, 744,271 tons	832,713
Salt, 88,063 tons	310,967
Sand-glass, 11,065 tons	8,178
Sandstone, 159,573 cu. ft.	148,148
Serpentine, 1,000 cu. ft.	3,000
Silver, 1,138,858 ounces	751,646
Slate, 7,000 squares	60,000
Tungsten	120,587
Zinc	10,598
Totals	$55,697,949

The feature of the year, as disclosed by the returns, was the advancement of petroleum to the first place, surpassing gold in the value of output for the first time. The production of gold and silver fell off $2,070,708 in 1907, as compared with the preceding year. Petroleum, owing to the increase in price, was more largely produced and was brought up to the first rank in aggregate values.

Metallic substances, including precious metals, represent $24,896,083 in the grand total for 1907. The metallic substances include gold, silver, quicksilver, copper, lead, tungsten, zinc, platinum and chrome. The production of zinc, which was first reported in 1906, continued in 1907. In metallic substances the figures for 1907, compared with 1906, show a falling off that amounts to $1,206,619. As the decrease in the precious minerals amounted to $2,070,708, the other metallic substances are seen to have been more largely produced than in 1906.

The gains are in copper, pyrites, chrome and platinum. As usual the value of silver is given at the commercial average rating in New York.

The non-metallic substances were produced in 1907 to the value of $2,495,000. Under this heading are included coal, mineral waters, borax, infusorial earth, salt, magnesite, manganese, gypsum, mineral paint, fuller's earth and gems. The production of the non- metallic substances in 1906 was $2,589,984.

The greatest increase for 1907 was in hydrocarbons and gases. The combined values of these substances was $18,029,937, a gain for the year over the total value for 1906 of $7,859,664. The hydrocarbons are asphalt, bituminous rock and petroleum. Values are estimated for the several grades of petroleum on the basis of f. o. b. in the various fields, the barrel prices on unexpired contracts being also taken into account. There were produced 7,687,171 more barrels of petroleum in 1907 than in 1906. The production of asphalt rose from 77,756 tons to 79,718 tons and the value from $777,560 to $1,058,400.

Structural materials made a record of production for 1907 of $8,011,810, as against $7,859,126 in 1906. The list of California structural material includes bricks, pottery clays, cement, lime, limestone, rubble, macadam, concrete rock, marble, granite, sandstone, slate, glass sand and serpentine. The largest gain in any branch of the structural material industries must be credited to the brick and pottery clays, taken together.

The minerals in 1907 took the following order in values: Petroleum, gold, copper, clays and their products, cement, borax, silver. This is the same order as in 1906 with the exception that petroleum succeeds to the first place and gold takes the second place.

DIVIDEND PAYERS IN CALIFORNIA OIL.

Reported by T. V. Doub, Secretary Stock and Oil Exchange.

Of the fifty-eight listed companies on the California Stock aud Oil Exchange, thirty-three are now paying dividends and twelve more will probably be in the dividend column by the first of the year.

The total amount of dividends now being paid by the listed companies on this exchange is about $300,000 per month, or at the rate of $3,600,000 per year.

The total dividends for the year 1908, from all the oil companies now doing business in this State, not including the Standard, will probably reach the $6,000,000 mark, and should reach the $10,000,000 mark for the year 1909.

The Californuia Oil Fields, Limited, is one of the largest oil companies doing business in this State that is not listed on this exchange; it has a production of over 10,000 barrels per day and paid out nearly $800,000 in dividends to its stockholders in 1907, which is 40 per cent on its issued capital of $2,000,000. Owing to the increase in the price of oil, it will probably be in shape to pay over 50 per cent in dividends this year on its issued capital of $2,000,000.

The Four Oil Co. has been one of the most remarkable companies doing business in this State; for nearly eight years it has operated on 20 acres of land in the Kern River Field; after paying one-sixth (1-6) to the owners of the land, as a royalty, it has paid to its stockholders, from the sale of the other five-sixths (5-6)

of its production, (at the average price of less than 20c per barrel) $180,000 in dividends; which is at the rate of $9,000 per acre. Had the company received 60c per barrel, the price at which oil is selling at the well now, it could have paid out in dividends to date $700,000, or at the rate of over $35,000 per acre. The Four Oil Co. is still producing nearly 500 barrels per day.

The Peerless Oil Co. in eight years, has taken out of its 160 acres in the Kern River Field (at 20c per barrel) approximately $1,600,000, or at the rate of $10,000 per acre. Had it received 60c per barrel (*), the prevailing price now, it would have taken out in the eight years $4,800,000, or $30,000 per acre. The Peerless is still producing lots of oil.

The Sauer Dough, owning 30 acres in the Coalinga Field, has paid out in dividends $300,000, or at the rate of $10,000 per acre. At the rate of 60c per barrel, it could have paid out $30,000 per acre, or $900,000 in all. The Sauer Dough is still a large producer.

There are other companies in the State that have done as well as the three above mentioned.

There is now being produced in this State over 40,000,000 barrels of oil per year, and a ready market for every barrel produced.

California fuel oil has a greater intrinsic value to the producer in one respect than refining oil, as he can sell it for fuel as it comes from the well and does not have to depend on selling it to a refinery; and fuel oil at $1.00 per barrel at the well will always have the preference over coal. It looks now as though oil, like water, will soon find its level, that is, $1.00 per barrel at the well in preference to coal.

With England, Japan and the United States looking for fuel oil for their navies, it would look like the best thing that could happen to the oil industry, would be to find some more new oil fields.

When fuel oil was first discovered in quantities in this State in 1900, it sold at $1.00 per barrel at the well; but the price in 1906 dropped as low as 15c per barrel at the well. Now there is a demand for more oil than there is produced.

(*The present approximate price.)

PETROLEUM PRODUCTION IN 1907.

David T. Day in Report of U. S. Geological Survey.

A total output far in excess of that of any previous year, an unparalleled accumulation of stocks, and high prices for oil of all grades characterized the petroleum industry of the United States in 1907, according to David T. Day, of the United States Geological Survey, whose statistical report is now in course of publication by the Survey as an advance chapter from "Mineral Resources of the United States, Calendar Year 1907."

The total production of petroleum in this country in 1907 amounted to 166,095,335 barrels, or 22,149,862 metric tons, an increase of 39,601,399 barrels over the production of 1906, which was 126,493,936 barrels, or 16,868,599 metric tons, the increase being greater than the total product of petroleum in any year up to 1889. The total value increased from $92,444,735 in 1906 to $120,106,749 in 1907. The average price decreased slightly, from $0.731 per barrel in 1906 to $0.723 in 1907.

The rank of the leading petroleum States was changed materially during the year, Kansas and Oklahoma, with a production of 45,933,649 barrels in 1907 as against 21,718,648 barrels in 1906, attaining first place, and California dropping to second place, though her production amounted to 39,748,375 barrels in 1907 as compared with 33,098,598 barrels in 1906. The greatest change, however, was in Illinois, where the increased production—from 4,397,050 barrels in 1906 to 24,281,973 barrels—brought the State from ninth to third place, with an output more than fivefold that of 1906 and practically double that of Texas, which stood fourth in both years. Ohio, which stood third in 1906, with a production of 14,787,763 barrels, dropped to fifth place, its production amounting to 12,207,448 barrels. Pennsylvania's output in 1907—9,999,306 barrels—put it in the sixth place instead of fifth. West Virginia, with a production of 9,095,296 barrels in 1907, has seventh place instead of sixth; Indiana is No. 8, with a production of 5,128,037 barrels, and Louisiana No. 9, with an output of 5,000,221 barrels in 1907, whereas in 1906 Louisiana's production was in excess of that of Indiana, and the States occupied respectively seventh and eighth places. New York, Kentucky and Tennessee, Colorado, Utah and Wyoming, and Michigan and Missouri complete the list in the same order as in 1906.

The rank of the States according to value of product is more significant than their rank according to quantity, as the value reflects the utility of the product. In this respect changes were also radical. In spite of a comparatively low price per barrel, the mid-Continent product rose in value from fourth to first place because of the great yield of the Glenn pool and because the completion of two pipe lines to the Gulf gave an outlet which, together with the decline in Louisiana oil, steadied the mid-Continent price. The price of Illinois oil was also sustained well enough, notwithstanding the great output, to make the value of the product advance from ninth to third place, while California's increased production and price sufficed only to leave the value in sixth place as in 1906.

During 1907 a total of 18,855,691 barrels of oil were consumed as fuel by the railroads of the United States, as against a total of 15,577,677 barrels in 1906. The estimated length of line operated by the use of fuel oil in 1907 was 13,593 miles, and the total length of line covered by oil-burning engines is estimated at 74,197,144 miles, an average of 3,935 miles per barrel of oil consumed. Most of the oil consumed was crude oil, the remainder being residum from the refineries, the product remaining after the lighter oils have been extracted.

United States the Greatest Oil Producer.

This country is the greatest oil producer in the world, according to Doctor Day's table showing world production, its output in 1907 being more than 100,000,000 barrels in excess of that of its closest rival, Russia.

The petroleum report will be ready for distribution in a few weeks, when it may be obtained by applying to the Director of the United States Geological Survey, Washington, D. C.

REINFORCED CONCRETE FOR LIQUID STORAGE.

A Durable Material for Water Tanks and Oil Reservoirs and Sumps

Recent experiments have been made in tank construction employing reinforced concrete in the line of tanks for gas, cyanide solutions, slimes, corrosive liquids, and for petroleum oil. There is no doubt that an efficient and durable reservoir for oil may be constructed of reinforced concrete lined with asphalt, provided the geographical situation of the site of construction is such that the freight rates on the basic material and cement are not prohibitive.

In some of the oilfields the soil is not adapted to earthen reservoirs or sumps. In such fields the employment of concrete and asphalt should prove an economy in the operation of oilwells. But whether the concrete tank for the storage of large quantities of oil shall become an effective competitor of steel is doubtful.

Steel tanks have been constructed and shown to stand a capacity of 55,000 barrels, and as an experiment there is a tank in the Salt Lake field of a capacity of 66,000 barrels. The ordinary and sufficient capacity in most of the oilfields is 35,000 to 37,500 barrels. Both concrete and steel have their individual and peculiar advantages. In some instances and localities the concrete may have the advantage of economy in cost of material, and as to durability in ordinary climates the advantage is probably about equal. But there is one element of economy in oil tank construction that must be considered—the removal of tanks from one field of operation to another. The steel tank may be erected, knocked down, removed and be set up again. The concrete tank must remain intact, or be wholly destroyed or remain useless; it cannot be removed and reconstructed.

For permanent water tanks in localities where materials are economically available reinforced concrete should prove efficient and economical. In some instances the mineral contents of the water to be stored are such that concrete is preferable, regardless of cost, as in the case of the concrete water tower at Attleboro, Mass., where the water contains large quantities of carbon dioxide. The water tower at Attleboro is one of the largest concrete structures of the kind in the United States. It has a capacity of 1,500,000 gallons; stands 106 feet high, 50 feet in diameter, with walls 18 inches thick at the bottom, 8 inches thick at the top. At Anaheim, Cal., a water tower of reinforced concrete has recently been built, having a capacity of 200,000 gallons. The tank is 32 feet diameter, 38 feet high; the walls are 3 inches thick at the top, 5 inches at the bottom. It is supported on posts 70 feet high, making the extreme height, from the lowest foundation to the highest top point, 112 feet. The water tower at Fort Revere, Boston harbor, is another example of the use of concrete for the storage of water. It is 93 feet from ground to apex; has a tank 20 feet in diameter, with a spiral stairway between the tank and the outer wall.

For the storage of water, wine and beer reinforced concrete is largely employed, but the experiments in the use of concrete for the storage of petroleum have not yet reached the stage of practical demonstration, and until that stage is reached there can be no occasion for an extended discussion of the subject.

The Pacific Tank Co. catalog No. 7 is a new publication, descriptive and illustrative of the various tanks and other goods manufactured by this company, including cyanide plants, mining and mill supplies, water, oil, and other tanks. The company has three factories—at San Francisco, Los Angeles and Olympia, Washington. The San Francisco office is at 318 Market St.; Los Angeles, Equitable Bank building.

THE L. W. BROWN CRUDE OIL CLEANER

Recent Improvement in Oil Saving Invention by Linus W. Brown, M. Am. Soc. C. E.

The L. W. Brown Crude Oil Cleaner is an apparatus through which crude oil is pumped directly from the oilwell as fast as produced, and separated from sand, water, and other foreign and impure substances, and delivered directly to storage without allowing the oil to come in contact with the earth or the atmosphere.

The loss from absorption and evaporation when crude oil is allowed to leach in an open sump is variously estimated at from 8 to 20 per cent. The heating of oil in open sumps and to clean and pump the same adds to the loss from evaporation and percolation. Under ordinary conditions, allowing for radiation losses, there is required for fuel 1.5 barrels of oil to heat and pump 100 barrels of oil from open sumps, or about 1.5 per cent of production.

The improvements recently made in the crude oil cleaner are fundamental, which not only simplifies construction and reduces cost of the machine, but admits of the absolute and perfect separation of the several components of crude oil having different specific gravity, and also admits of the conserving of every atom of value produced from an oil well, such as fixed gasses, uncondensed distillate vapors, or vapors produced by the process of freeing the oil from all foreign substances.

Figs. 1 and 2 are vertical sections of separating tanks and appliances on vertical planes right angle to each other. The separating tank is provided with oil injection, water jets, valve for removing sand, telltale water level regulator, gas and vapor separating tank, spray condensor, distillate collecting tank, etc., arranged about as shown in the cuts.

Crude oil from the wells is admitted into the pipe connections at either or both of the two check valves, and is delivered into the small gas and vapor separator, at which point the fluid has received the maximum amount of heat required for cleaning the oil, so that all vapors arising from the process are eliminated at this point; the fluid containing the oil, sand, water, clay, asphaltene and other impurities, falls by gravity into the separating tank, and the component parts of different specific gravity are separated; all parts having a specific gravity equal to or greater than water falls to bottom and are removed by the main saud valve, and the clean oil rises to top of tank and flows into a flow tank from which it is pumped to storage. The fixed gasses, and all uncondensed vapors separates from the fluid in the small gas and vapor separating tank and flow by pipe, as shown, to a small tank iu which is placed a spray condenser, where all vapors are condensed and the product retained in a larger tank, and as any light oil accumulates is drawn off into suitable receptacles; the fixed gases flow into the gas lines leading to furuace or point where used for fuel.

To produce satisfactory results the machine embraces the following qualifications: (1) Absolutely continuous in operation; (2) Admit of regulation of heat to suit the volume and quality of oil treated; (3) Non-clogable and easily cleaned; (4) Simple in construction and the parts secure from disarrangement from operation; (5) So arranged that its proper adjustment can be made by men of ordinary iutelligence; (6) Admit of satisfactory operation on lines requiring but little time of au attendant to clean and adust, and to be performed without help other than the usual oilwell pumper; (7) Standard machines must have capacity to handle 300 barrels of oil in 24 hours with the exhaust steam of an engine operating oilwell, or 600 barrels per 24 hours by using live steam in addition to the exhaust; for larger capacity special machines may bo built.

In the main the apparatus consists of a separating tank and a flow tank. The separating tank is made of No. 7 steel, aud the flow tank of No. 16 galvanized iron.

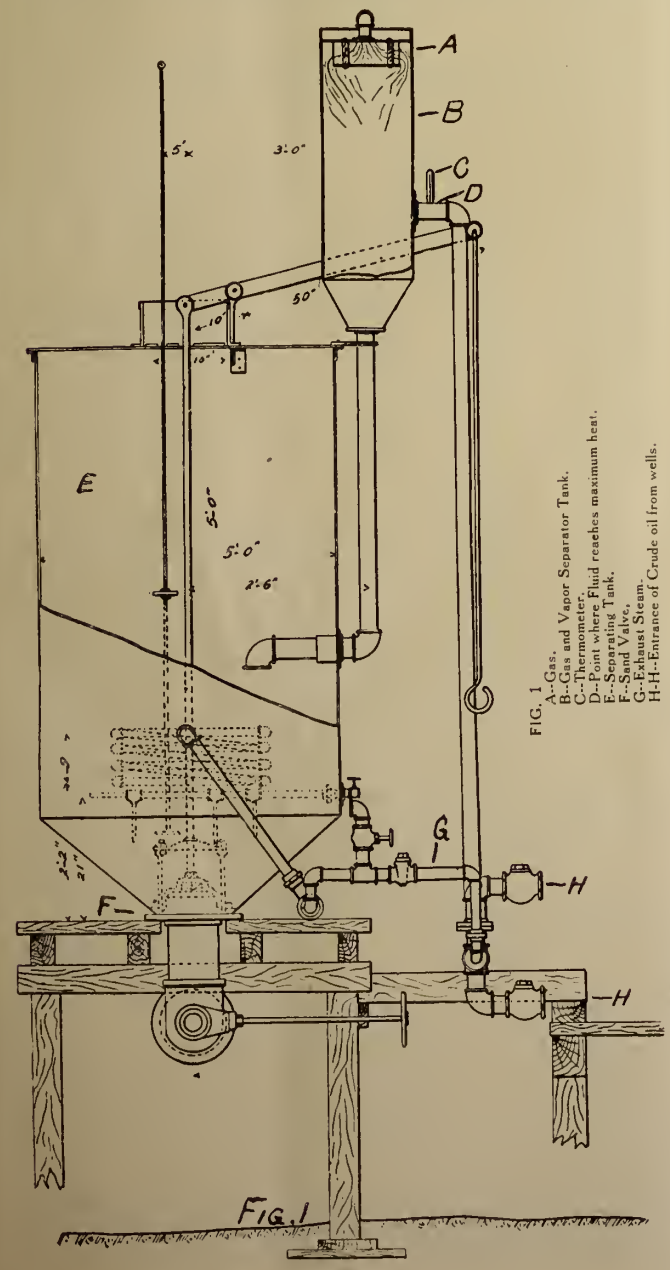


FIG. 1
A--Gas.
B--Gas and Vapor Separator Tank.
C--Thermometer.
D--Point where Fluid reaches maximum heat.
E--Separating Tank.
F--Sand Valve.
G--Exhaust Steam.
H-H--Entrance of Crude oil from wells.

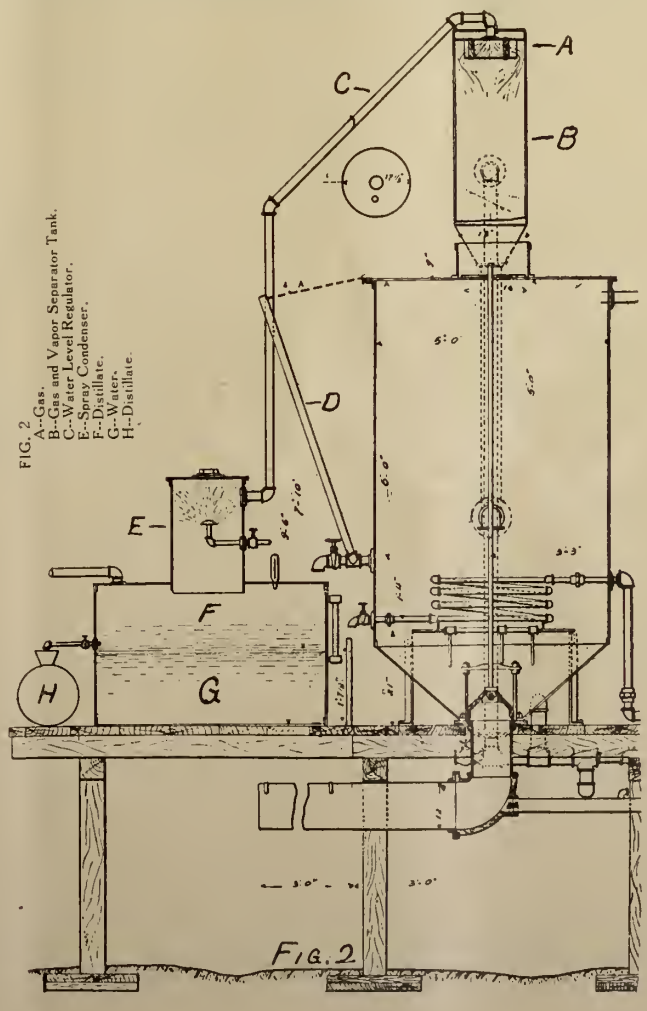


FIG. 2
A--Gas.
B--Gas and Vapor Separator Tank.
C--Water Level Regulator.
E--Spray Condenser.
F--Distillate.
G--Water.
H--Distillate.

GOVERNMENT OIL INVESTIGATION

Review of Statistical and Technical Facts Submitted to the President by the Commissioner of Corporations.

By Lewis H. Eddy

VIII.

DISTRIBUTION OF PETROLEUM.

Cost of Pipeline Transportation—Pipeline Charges—Comparison With Rail Charges.

In estimating the cost of transporting crude oil by pipeline (in 1904) the report of the Commissioner of Corporations bases the computation on the deliveries from the Appalachian and the Lima-Indiana fields to the Seaboard, and from Lima-Indiana field to Whiting, Indiana. These deliveries are computed as follows:

	Barrels.
Appalachian crude (total deliveries)	26,284,485
Lima-Indiana crude (total deliveries)	23,656,358
Total	49,940,843
Deductions for consumptions by refineries, exports, and sales to Independents	18,301,000
Net Seaboard deliveries (about)	31,640,000

The tabulations following are condensed from the tables in the report, which tables are made on the basis of the following movements of oil:

	Barrels.
Appalachian field to the Seaboard	31,000,000
Lima, Ohio, to the Seaboard	12,000,000
Lima, Ohio, to Whiting, Indiana	7,500,000

The report gives the following estimates of the cost of construction of the three lines and pumping stations as follows:

Appalachian to Seaboard	$15,543,000
Lima, Ohio, to Seaboard	5,483,000
Lima, Ohio, to Whiting	2,712,000

On these estimates of cost of construction the depreciation and interest in the following table are based. The cost of operation per station ($26,400) is detailed in the preceding chapter (in the June California Derrick).

The following tabulations are made up from the more elaborate tables in the report, showing the total costs of operation, depreciation, and interest (in dollars) and the cost per each item per barrel (in cents).

Estimated Cost of Pipeline Transportation.

(On a basis of $26,400 per year per station.)

Appalachian Field to Seaboard:	Total.	Per bbl.
Operation cost 39 stations handling 31,000,000 barrels	$1,029,600	3.32
Depreciation, 5% on $15,543,000	777,150	2.51
Interest at 10%	1,554,300	5.01
Total	$3,361,050	10.84
Lima, Ohio, to Bear Creek, Pa.:		
Operating cost 9 stations handling 12,000,000 barrels	$ 237,600	1.98
Depreciation, 5% on $5,483,000	274,150	2.28
Interest at 10%	548,300	4.57
Total	$1,060,050	8.83
Lima, Ohio, to Whiting, Ind.:		
Operating cost 4 stations handling 7,500,000 barrels	$105,600	1.40
Depreciation, 5% on $2,712,000	135,600	1.81
Interest at 10%	271,200	3.62
Total	$512,400	6.83
Lima, Ohio, to the Seaboard (per barrel cost only):		
(This cost is computed by adding the Appalachian-to-Seaboard cost to the Lima-to-Bear Creek cost.)		
Operating cost		5.30
Depreciation		4.79
Interest		9.58
Total		19.67

Appalachian to Seaboard (cost in mills per mile):

	Per bbl.	Per ton.
Cost of operation	0.10	0.74
Depreciation, 5%	.07	.52
Interest at 10%	.15	1.12
Total	.32	2.38

The report points out the fact (which is illustrated in the tables) that the cost of operation proper constitutes only about 31 per cent of a charge for transportation, based on a return of 10 per cent on the cost of reproduction, while the interest and profit constitute 46 per cent of such charge.

The average distance traveled by the 31,000,000 barrels through the Appalachian trunk lines is estimated at 335 miles, and the average distance traveled by both Lima and Appalachian oil is estimated at 435 miles.

Regarding the rates for the transportation of oil by pipeline the report says "little information is available as to the nominal rates of the Standard pipelines for trunkline transportation prior to the enactment of the Federal act of 1906 declaring pipelines to be common carriers. . . . The Standard officers testified before the Industrial Commission, however, that the pipeline rate from the Appalachian oilfields to New York was 45 cents a barrel." At that time the rail rate to New York was the same, or 16.5 cents per 100 pounds. As shown by the tabulated statements foregoing the actual cost of transportation, including operating expenses and depreciation, was 5.83 cents per barrel, and that after allowing 10 per cent interest on the investment of $15,543,000, the cost of transportation from the Appalachian field to the Seaboard would be 10.84 cents. The report says that "it is obvious therefore that the rate of 45 cents was altogether extortionate," and that there is no wonder that no use was made of it by Independent shippers.

The report says that while the Standard has filed a large number of pipeline rates with the Interstate Commission these rates do not affect the Independents, but the report presents some of these rates for the purpose of comparing them with the cost of transportation. The cost, as shown in the following table, is computed by multiplying the distance by the estimated average cost per mile per barrel from the Appalachian field and Lima, Ohio, combined, to the Seaboard (0.17 mill for operation and depreciation, 0.33 mill including 10 per cent interest on investment).

While the table in the report includes the cost for operation and depreciation and also the same cost with the interest added, and the difference between the published rate and each of these costs, the following abstracts from the Commissioner's table are confined to the distance in miles; and to the rate per barrel, the total cost per barrel, and the difference per barrel between the rate and the total cost, stated in cents.

Comparison of Published Pipeline Rates and Cost of Transportation.

From—	To—	Miles.	Rate.	Cost.	Dif.
Preble, Ind.	Lima, Ohio	49	15.0	1.6	13.4
Preble, Ind.	Cleveland, Ohio	252	28.0	8.3	19.7
Downs, W. Va.	Franklin, Pa.	*129	25.0	4.3	20.7
Scio, Ohio	Franklin, Pa.	*140	25.0	4.6	20.4
Morgantown, W. Va.	Philadelphia	274	39.0	9.0	30.0
Corning, Ohio	Philadelphia	402	39.0	13.3	25.7
Cygnet, Ohio	Philadelphia	530	53.5	17.5	36.0
Cygnet, Ohio	Unionville, N. Y.	546	52.0	18.0	34.0
Lima, Ohio	Philadelphia	577	53.5	19.0	34.5
Lima, Ohio	Unionville, N. Y.	598	52.0	19.6	32.4
Griffith, Ind.	Buffalo, N. Y.	604	52.5	19.9	32.6
Griffith, Ind.	Philadelphia	766	68.5	25.3	43.2
Griffith, Ind.	Unionville, N. Y.	782	67.0	25.8	41.2

*Part of distance estimated.

The report presents tabulated comparisons of pipeline rates with railroad rates for crude oil, giving the distance and the rates per 100 pounds and per ton. The following abstract from the report omits the rate per ton. The pipeline rates are reduced to the basis of 100 pounds on the assumption of 6.4 pounds to the gallon.

The report says that from the fact that the pipeline and the rail rate are in some instances the same, and in other instances the difference is so small, it is obviously the policy of the Standard to make the pipeline rates substantially the same as the rail rates. And further, that this situation with respect to the rates leaves no incentive to the Independent shipper to use the pipelines where there is any possibility of rail transportation. In fact, the report claims, it is more advantageous to the Independent shipper to use the railroad, because he need not ship more than one carload at a time, whereas the pipelines, from most points, require a minimum shipment of either 75,000 or 300,000 barrels.

Aside from the evidence presented the report says that the officers of railroads very commonly state that the cost of pipeline transportation is much lower than the cost of rail transportation, and that they cannot hope to compete with pipelines.

Comparison of Published Pipeline Rates and Railroad Rates.

		Distance Miles.		Per 100 lbs. Cents.	
From—	To—	Pipe.	Rail.	Pipe.	Rail.
Griffith, Ind.	Lima, Ohio	189	188	11.9	12.0
Griffith, Ind.	Cygnet, Ohio	237	212	11.9	12.0
Morgantown, W. Va.*	Philadelphia	274	392	14.5	14.5
Cygnet, Ohio	Olean, N. Y.	312	326	13.0	14.5
Lima, Ohio	Olean, N. Y.	361	350	13.0	13.0
Cygnet, Ohio	Philadelphia	530	607	19.9	19.5
Lima, Ohio	Philadelphia	579	615	19.9	20.5
Griffith, Ind.	Buffalo, N. Y.	606	507	19.5	19.5

*Both pipeline and rail rates apply also from various other points in the Appalachian field.

All of the foregoing computations of cost of pipeline service relate exclusively to trunklines. In addition to this cost the report says

there is a considerable expense for the local gathering of oil from the wells. The wells are usnally served by 2-nch pipes, though in some instances the gathering lines are as large as the trunkline pipes. For example, the Prairie Oil and Gas Co. treats all its lines south of Humboldt, Kansas, as a gathering system, although this system has many miles of 6-inch and 8-inch pipe.

The report gives the estimated cost of gathering oil by the Prairie Oil and Gas Co. based on an investment of $2,474,000. This amount iucludes $370,000 for tankage. The followiug table shows the results of these estimates in summarized form, together with tne expense per barrel obtained by dividing the various items by the runs from the wells, 3,387,605 barrels in five months ending May 31, 1905.

Estimated Cost of Gathering Oil Exclusive of Storage.

Items.	Amount, Dollars.	Per bbl. run. Cents.	Per cent of total.
Transportation expenses	100,610	3.0	32
General expenses	38,842	1.1	12
Estimated cost of transporting balance to Humboldt (100 miles at one-teuth of 1 mill per bbl. per mile	20,696	.6	7
Total operating expenses	160,148	4.7	51
Depreciation on investment ($2,474,000 at 5 per cent for 5 months)	51,542	1.5	16
Interest at 10 per cent for five mouths	103,083	3.1	33
Total	314,773	9.3	100

IX.

DISTRIBUTION OF PETROLEUM.

History of Pipelines—Description of Pipelines—Comparison of Pipeline Runs.

The first oil pipeline in the United States, constructed in 1865, had a length of only 4 or 5 miles, running from Pithole, near Titusville, Pa., to the railroad. In 1899 the Staudard Oil Co. admitted the ownership of about 35,000 miles of pipelines. Up to 1879 the pipelines were practically confined to local collections and distribution of oil from the wells to the local refineries, or to the railroads, by which it was transported in tank cars to Cleveland, Pittsburg, Philadelphia, and New York, the then leading refining centers. Later, longer lines were laid, superseding railroad trausportation of crude oil. The first line from the fields to the seaboard was completed in about 1881.

In 1888 there were ouly two pipelines of importance, not coutrolled by or affiliated with the Staudard Oil Co., in the Appalachiau field. These were the Pittsburg line and the Western Atlantic line. Their combined runs of crude oil in the year 1888 amounted to only 1,187,508 barrels of crude out of a total for all reporting lines in the Appalachian field of 16,366,664 barrels. They were absorbed by the Standard in that or the following year.

The Commissioner's report does not preseut complete statistics of all the pipelines in all the fields of the United States, but contains a tabulated "description of the leading pipelines in aud from the various oilfields, showing statious, distance between stations, and number aud diameter of pipes." The pipelines of the Associated Oil Co. and the Union Oil Co. of Califoruia are omitted from this tabulation, but are described in the text of the report. It is impossible, the report declares, to make a significant comparison of Standard and Independent pipeline business in California, both because of the absence of statistics for some of the liues, aud of the difference in conditions under which they respectively carry oil.

The report adds that, as a matter of fact, most of the crude oil produced in California has not been transported long distances by pipeline; and while necessarily most of it passes through pipelines for short distances a large portion goes only to neighboring storage tanks, railroads, or to tidewater. In describiug the Uuiou Oil Company's pipeline business the report refers to the new line across the Isthmus of Panama, saying that it is expected that a large amount of oil delivered to the California coast will be shipped by vessel to the Isthmus (at Ancon), piped across aud thence distributed by tank steamers to points on the Atlantic coast and iu Europe.

As the pipeline business in California has been largely augmented since the gathering of the information on which the Commissioner's report is based, and as a special report on California is promised by the Bureau of Corporations, further reference to California pipelines is not essential to this review, particularly as the Eastern fields are of much greater (present) importance in the showing essayed by the report of the position of the Standard Oil Co. in the pipeline branch of the petroleum industry.

In a comparison of runs of crude oil from wells in the Appalachian field by the Standard and the competing pipelines in 1904 the Commissioner's report quotes from the report of the Geological Survey, showing that five lines controlled by and two lines affiliated with the Standard carried 27,823,504 barrels, while the combined transportation of thirteen Independent lines was only 3,495,803 barrels. Of this latter quantity the Producers and Refiners Pipeline Co. transported 2,109,513 barrels; the United States Pipeline Co., 111,959; the Emery Manufacturing Co., 313,175; the remaining 960,636 barrels being credited in aggregate to the ten other Independent pipelines here named: Columbia, Allegany, Union, Penn, Glade, Cornplanter, Continental, Wilburine, Daugherty, National. The total runs of the twenty lines thus computed (31,319,307 barrels), the report says, corresponds closely with the total production of the Appalachian field (31,408,567) as reported by the Geological Survey, which (production) figures are chiefly based on the known pipeline runs plus the estimates for smaller pipelines. These estimates for smaller pipelines for the year 1904 are evidently represented by the 960,636 barrels credited to the ten companies last named—these figures being equal to the difference between the reported pipeline runs (30,358,671 barrels, in the table following) and the total production (31,408,567).

Pipeline Runs (in Bbls.) in Appalachian Field, Showing Standard's Proportion, 1894 to 1905.

Year.	Total Production.	Total Reported Pipeline Runs.	Standard's Proportion.	Standard's Per cent.
1894	30,783,424	30,117,096	25,813,062	85.7
1895	30,960,639	30,351,414	26,237,160	86.4
1896	33,971,902	33,505,197	31,506,601	94.
1897	35,230,271	34,773,565	32,911,214	94.6
1898	31,717,425	31,156,449	20,390,708	94.3
1899	33,068,356	32,260,689	30,468,989	94.4
1900	36,295,433	35,540,964	33,681,373	94.8
1901	33,618,171	33,091,120	31,306,478	94.6
1902	32,018,787	31,404,187	29,029,795	92.4
1903	31,558,248	30,693,947	28,213,972	91.9
1904	31,408,567	30,358,671	27,823,504	91.6
1905	29,366,960	28,080,834	25,696,308	91.5

In presenting the foregoing table of comparison of pipeline runs from 1894 to 1905 the report says the increase in the Standard's proportion in 1896 was due to the absorption of the Mellon pipeline, which was established in 1891 and had built up a considerable business; the decline in the Standard's proportion since 1901 is chiefly attributed to a rapid increase in the runs of the Pure Oil Co. lines, the most important of these independent lines (the Producers and Refiners Pipeline) increasing from 1,210,457 barrels in 1901 to 2,109,513 barrels in 1904.

With the exception of the lines controlled by the Pure Oil Co., the report says, all the Independent pipelines in the Appalachian field are small concerns confined to limited areas. The Independent pipeline system now controlled by the Pure Oil Co. is composed of two main parts: (1) the Producers and Refiners pipeline, which collects the oil from the wells and delivers it to refineries; (2) the United States pipeline, which transports crude and refined oil to the seaboard. The collecting lines originated in a movement that organized the Producers Protective Association, formed of leading crude producers in 1887, and which brought about the shutdown of crude oil production during 1887 and 1888 in the effort to construct au independent pipeline. This scheme was delayed by the selling out of the Union Oil Co. (of Pennsylvania) to the Standard; but was accomplished in 1891, and the first runs of oil from the wells were made in 1892. Thus was organized the Producers and Refiners Oil Co. Then followed the organization in 1892 of the United States Pipeline Co., which completed pipelines for both crude and refined to Wilkesbarre. Being denied rights of way across the State of New Jersey to tidewater, it was forced to extend southward to Marens Hook, near Philadelphia; through which line the company pumped its first run of oil to the seaboard in 1901.

The Pure Oil Co. was formed by Independent refiners in 1895 as a result of their failure to make terms with the Standard in a price war particularly affecting the export trade that the United States Pipeline Co. (through its railroad connections with New York harbor) had fostered on behalf of the Independent refiners. In order to prevent affiliation with the Standard a voting trust of the stock of the Pure Oil Co. was created. The Pure Oil Co. finding it difficult to secure continuous and adequate supply of crude oil entered into crude production in its own name and in the name of the Pure Oil Producing Co. (a subsidiary concern in Monroe county, Ohio). Recently the production of these companies has extended into Illinois. The capital stock of the Pure Oil Co., proper, outstanding December, 1904, was $4,694,885, the company owning stock in the subsidiary companies.

The leading pipeliues, including the Pure Oil Co. lines, are delineated on maps in the Commissiouer's report. In a brief description of the other Independent pipelines in the Appalachiau field the report says they are too small to be conveniently shown on general maps. The names of the compauies, the locations of the lines, and the lengths and the various sizes of the pipes are given in a table which shows that the lines vary iu length from 1.2 miles to 125 miles, and that the diameters of the pipes include 1½, 2, and 3 inches.

California Derrick

The Oil Authority of the Pacific Coast

Published Monthly

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JULY, AUGUST, SEPTEMBER, 1908

ANNOUNCEMENT.

For various reasons the publication of the California Derrick has been delayed, but the present issue combines the July and August numbers. All subscriptions will be extended to make up for the difference in time. Hereafter the Derrick will be published regularly each month and, under the new management, for subscribers will note that the paper has changed hands, it is the intention to publish a magazine second to none in the country.

Special articles of interest will continue to be one of the features of the Derrick and the oil industry will be fully covered in its every aspect.

In California today the production of oil is the greatest of all industries and that production is growing rapidly. Even in the year 1907 the total product, for the first time in the history of the State, exceeded that of gold, and in 1908 it promises to show a still further advance. The great amount of activity in the drilling of new wells in various districts presages a production that will approach the twenty million dollar mark for the current year.

The California Derrick will be up with the times. It will be in every way possible an up-to-date publication—THE OIL AUTHORITY OF THE PACIFIC COAST.

The best evidence of its value will be itself, and instead of eulogizing our ability to meet the wants of every one interested in this great industry we will let the CALIFORNIA DERRICK speak for itself each month.

REVERSAL OF THE STANDARD OIL CASE.

The petition of the United States Government for a rehearing of the celebrated Standard Oil Co. rebate case was filed with the United States Appellate Court on August 21, and the answer of the Standard Oil Co. of Indiana (the defendant company of record) was filed in the same court on September 10.

The history of the case is familiar to the public and need not be here rehearsed in detail. The Standard Oil Co. of Indiana shipped oil in carload lots from Whiting, Indiana, to East St. Louis over the Chicago and Alton Railroad, covering a period from September 1, 1903, to March 1, 1905, and including 1462 carloads, at a rate of 6 cents per 100 pounds, when the published rate from Whiting and Chicago was 18 cents per 100 pounds. It was claimed by the Standard that the 6-cent rate was justified by the fact that the Chicago and Eastern Illinois Railroad had a rate from Dolton (a station just outside of Chicago) of 6¼ cents per 100 pounds. This rate was posted at Dolton in 1895, being a single mimeograph sheet, and was not known to other shippers. The 18-cent rate was filed with the Interstate Commerce Commission; and a part of the shipments made by the Standard were billed at the 18-cent rate, and other parts were blind-billed, but the settlements by the Standard with the railroad company were made at the 6-cent rate. That is about all there was to the case, except the legal technicalities.

In August, 1907, the United States District Court (Judge Kennesaw M. Landis), after conviction by jury, fined the Standard Oil Co. the maximum penalty of $20,000,000 on each of 1,462 counts in an indictment under the Elkins law, making a total of $29,240,000. On July 23 the United States Court of Appeals reversed the lower court and remanded the case for re-trial.

Chief Justice Grosscup of the Court of Appeals, who wrote the opinion in reversal, which his associates concurred in, held that the lower court erred in the matter of the admission and exclusion of evidence regarding the knowledge of the defendant respecting the legal rate; and as to the measurement of the offense; and as to the discretion of the judge in fixing the penalty at the maximum.

There are two vital points in this judicial controversy, and only two, in the opinion of the California Derrick—the measure of the offense, and the responsibility of the parent company.

That the lower court was in error in the application of the carload lot as a unit of measurement of the offense seems very clear. If there be any other measure of the offense than the separate shipment or consignment (as designated by the bill of lading or shipping bill, whether it covered one or one hundred carloads) then the unit of measure of the offense must be 100 pounds, that being the quantity named in the fixing of the rate; and the defendant in such a construction would have been liable to a fine under the maximum of penalty to an amount approximately $360,000,000. If the shipper had been quoted a carload rate the unit of measure of the offense might have, with some show of legal reason, been made as the lower court fixed it. The opinion of the Appellate Court that the measure of the offense should have been on the basis of settlement, seems to be as far away from the just and legal measure as either the carload or the 100-pound theory. There were some 500 shipments, and only thirty-six (semi-monthly) settlements covering the transactions of eighteen months. Suppose there had been semi-annual settlements—which would no doubt have been the case had the defendant corporation expected prosecution and conviction. In expectation of conviction and fine the probability of paying the maximum penalty of $20,000 on each of three counts in an indictment would not have served as a deterrent. The profits of these rebates or refunds amounted to approximately $220,000 in the eighteen months; a reduction of this amount by the payment of a fine of $60,000 would have still left a very nice profit.

The opinion of the Appellate Court condemns the lower court for imposing a fine twenty-nine times greater than the capital stock of the defendant company, and expresses the view that Judge Landis abused judicial discretion in an attempt thus to reach and punish a corporation that was not on trial, namely, the Standard Oil Co. of New Jersey; notwithstanding that corporation, being the parent of the Standard Oil trust or combine, holds the majority of the stock of the defendant subsidiary corporation (Standard Oil Co. of Indiana). There is no doubt that the parent concern in any trust or combination of companies or corporations is, or should be made, legally responsible; else there could be no adequate punishment fall upon the actual offender. Whether the method employed in the lower court to maintain this contention was the proper and legal method is a question for jurists and legislators—and not a question for the press to discuss.

As to the enormity of the fine (irrespective of the unit of measure of the offense) the Appellate Court seems to support the contention of the Standard that, for the first offense (that has been proved) the fine is unreasonable and unjust. Possibly the Standard may have felt that it had been largely punished by being deprived of further opportunity to profit by the long established system of rebates. So the small boy who is being spanked for his first offense of stealing green apples, no doubt feels that the bellyache he suffers from eating the apples is punishment enough for the first time.

GOING INTO THE COALINGA FIELD.

The People's Associated Oil Co., a new incorporation, with head office in New York, has commenced active drilling operations in the Coalinga field. The company's property includes Sec, 32, 21-15, territory that is considered among the best oil land in the Coalinga district. Thus the success of the corporation is fully assured. It is understood that the People's Association Oil Co. is financed chiefly by New York capital, and has strong backing. The acreage is sufficient to

perpetuate the investment of a large amount of capital. The general manager and foremost active spirit in the corporation is Mr. E. W. Preston, a competent mining engineer, who selected the valuable holdings and who will have full charge of the development. The California Derrick is glad to see such strong new companies going into the active development of oil lands and production of oil in California oilfields, which, without doubt, offer the most attractive source of investment and profit to be found in the West.

OIL FOR THE NAVY.

Rear Admiral Evans, recently retired from command of the Atlantic fleet of the American Navy, was, during his incumbency, a confirmed and stubborn opponent of the employment of oil fuel as a substitute for or auxiliary to coal fuel in the battleships of the navy. It is quite probable that this opposition had weight with the Department of the Navy and was one substantial cause of neglect to give due consideration to the claims of the advocates of petroleum. In the days of his command of the fleet the opinions of Admiral Evans were entitled to respectful consideration. But there have been changes and advancement in the application of petroleum to the generation of steam for marine purposes within the past half dozen years. In his retirement the Admiral is entitled to the respect and honor of the entire people. But his position with respect to the use of oil fuel, if he still maintains hostility, should no longer deter the Department from making practical investigation and demonstration of the advantages of oil over coal as fuel for battleships. The present indications are that the opposition of Admiral Evans will be soon forgotten in practical evidence of the superiority of oil as fuel, to be secured from the tests to be made at Mare Island and in the construction of torpedo-boat destroyers fitted with both oil and coal burners.

Recent local items in the San Francisco dailies regarding the appointment of Mr. G. L. Allen to a position in the Geological Survey at Washington have stated that "Mr. Allen has done the only work in chemical analysis of the asphaltum and oil products of California that has been carried on independently of the commercial corporations." State Mineralogist Aubury takes exception to the statement quoted, and refers to Bulletins 31 and 32 issued by the State Mining Bureau; and he might have referred to other bulletins, showing that the State Mining Bureau has kept pace with the advancement of the petroleum industry. But it is not at all likely that either Mr. Allen or the Director of the Geological Survey has made the statement inferentially credited to them by the daily press. It is quite probable that a statement has been made to the effect that Mr. Allen has done the only work of this sort in California that has been done for the Geological Survey, independent of the commercial organizations, which is very likely the fact. In his exceptions to the misstatement in the daily press Mr. Aubury recites that Bulletin 31, Chemical Analyses of California Petroleum, gives the name of the producing company, the county, the location of well (and its name or number) by section, township and range, district, elevation, shipping station, formation, depth of well, daily yield, amount produced, time operated, depth to oil sand, thickness of oil sand, pipe line, if any. Then follows a complete analysis of the soil. With this Bulletin a consumer, given the district, can determine as to the chemical character of any oil in the State. And Mr. Aubury adds: "Altogether it will be found that California, through its Mining Bureau, has not been derelict in furnishing all needed information concerning the oil industry." There is no question as to the diligence of the State Mining Bureau in the matter of the petroleum industry, both during and preceding Mr. Aubury's incumbency, and it is not at all probable that the fact has ever been questioned by anybody connected with the Geological Survey, or by anybody else who keeps abreast of the oil industry and the work of the Mining Bureau.

REVIEW OF TECHNICAL BOOKS

Thirty-five Years of Oil Transport—The Evolution of the Tank Steamer.—J. D. Henry, editor of the Petroleum World. Printed by Bradbury, Agnew & Co., Ltd., London and Tonbridge; published by the Petroleum World, 22-23 Great Tower St., London, E. C. Mr. Henry has in this work performed a service that the great interests devoted to the petroleum industry all over the world will recognize and appreciate. The book is illustrated with photo-engravings and drawings, and artistically printed. While the subject deserves all that the art of the photographer and the printer may add to the text, the originality of the author and the vast fund of information that he presents are the features that appeal directly to the reader in every page of the text. Ordinary industrial and technical books have that air of labored effort that sometimes destroy their value and makes the reading of them, even for the student, an unpleasant undertaking. Mr. Henry's work may be read by a schoolboy or studied by an expert, and both will be entertained as well as instructed. The work is in three parts: The World's Oil-Carrying Fleets—Historical and Descriptive; (2) Some Oil Ports . . . and the Latest Oilfield Developments in British Colonies; (3) Tables and Formulae, also Rules and Regulations for the Transport of Oil and the Navigation of Tank Steamers in the Suez Canal and Rivers in Different Parts of the World. Present space is inadequate to a fair review.

Oil Fuel and the Empire.—J. D. Henry, editor of the Petroleum World. Printed by Bradbury, Agnew & Co., Ltd., London and Tonbridge. Published by the Petroleum World, 22-23 Great Tower St., London, E. C. The work is illustrated with half-tones, diagrams and original drawings. It is dedicated to the oil men of the Dominion of Canada who made first offer to supply colonial oil to the British navy. Of the several works on various topics relating to the oil industry the present book is the most interesting from the point of view of the nations interested in the use of oil fuel for marine purposes. The title does not indicate fully the importance of other countries than England the value of the text. Mr. Henry takes up the subject of the importance of the oil fuel industry to the British Empire, and apparently as incidental to the discussion presents the position of the United States navy in its relation to the use of oil for fuel in the warships of this country. The book contains 286 pages of text and illustrations, and there is not a page nor a paragraph in the whole that does not contain a fact or an idea worth the attention of every man interested in the petroleum oil industry, and particularly the civil and naval officials of the Department of the United States navy.

STATEMENT OF DIVIDENDS.

By California Stock and Oil Exchange, San Francisco, for Quarter Ended July 9, 1908.

Company.	No. of Div.	Date Paid.	Amount per sh.	Amount of Dividend.	Tot. paid to date.
Alma	11	Dec. 20 07	$ .03	$ 11,400	$ 125,400.00
Amalgamated	11	Jun. 15 08	1.00	50,000	550,000.00
Associated	4	Mar. 1 07	1.50	420,000	1,522,309.39
Brookshire	26	Jul. 1 08	.02	10,000	240,000.00
Caribou	39	Jul. 15 08	.25	20,175	297,016.74
Chicago Crude	2	Mar. 25 07	½c	5,000	15,000.00
Claremont	37	Jun. 15 08	.01	4,500	174,500.00
Esperanza	7	Jun 6 08	.01	1,600	11,050.00
Four	56	May 25 07	.01	3,000	177,000.00
Hanford	30	Jan. 20 06	2,00	4,000	80,000.00
Home	66	Dec. 20 06	.01	1,000	440,000.00
Homestake	55	Mar. 20 08	.10	1,000	67,250.00
Illinois Crude	10	Jun. 1 08	.02	4,000	30,000.00
Imperial	61	Jul. 8 08	.60	60,000	1,580,000.00
Kern River	32	Jul. 3 08	.10	2,000	84,000.00
Linda Vista	6	Jun. 8 08	.01	3,838	19,192.50
Monte Cristo	53	Aug. 10 07	.01	5,000	265,000.00
Nevada County	2	Jun. 13 08	.06	15,000	30,000.00
Peerless	62	Jun. 20 08	.06	6,000	711,000.00
Piedmont	2	May 7 08	.01	3,890	7,427.30
Pittsburg	10	Nov. 11 07	.24½	58,800	124,800.00
Reed Crude	8	Apr. 15 05	1.20	120,000	1,101,000.00
Rich Ranch	8	Aug. 20 07	.03	9,000	69,000.00
S. F. & McKittrick	2	Jul. 1 08	.20	10,000	20,000.00
Sovereign	11	Aug. 31 07	.01	5,000	60,000.00
Sterling	14	Jun. 15 08	.10	25,000	222,000.00
Superior	4	May 22 08	.01	5,000	20,000.00
Thirty Three	57	Apr. 6 07	.30	30,000	840,000.00
Union	144	Jun. 20 08	1.25	89,365	3,822,372.40
United Pet.	—	Jun. 20 08	2.30	33,764	1,032,520.40
Wabash	7	Jun. 24 08	.02	6,000	42,000.00
West Shore	39	Jun. 15 08	.10	10,000	200,000.00
Total dividends paid to date					$13,780,838.73

Reported by

Special Field Representatives

of the

California Derrick

SOUTHERN FIELDS

More oil is being shipped from the Southern fields of the State than ever before in their history. Producers are receiving a better price for their product than in the past three years, by 50 per cent. More development work is going on in these fields than at any time in their history. And as a little incentive for the oil man to get a "move on," the actual demand for oil is increasing. With the railroads increasing their demands constantly, the merchant marine extending their oil burning equipment and the navy making investigations along these lines, the oil man has become such a factor in the development of commerce and industry that he is obliged to move, and move rapidly. The real fear seems to be that there may not be enough oil, and some of the large consumers may curtail their wants. The trouble is, the wildcatters are not meeting with any success. To be sure, the Salt Lake field is being extended to some extent, and the Fullerton field is showing a greater production area than it was once supposed to have, but operators see the limits of these districts, and outside of these nothing new is being opened up. In fact, there is not the wildcatting being done that conditions would seem to warrant. The returns from the business during the past few years have been so meager that it is not an easy matter even now to get money interested unless there seems more than an even chance of winning out.

COALINGA.

The work of building the new camp on section 27-19-15, by the California Oilfields, Limited, goes merrily on. It will require about two months to complete what is already contemplated; at the end of that time there will be one of the most complete oil mining towns in America, situated in our field. The postoffice of Balfour will be opened for the benefit of all in the employ of the Limited, naturally the town is called Balfour. The large two-story building in which the postoffice will be located will be commenced this week, the foundation is now laid ready for the carpenters. The company has arranged quarters for its Jap servants in the two-story tank house. The upper floor is for lodgings, the lower floor is provided with bathrooms. The large bungalow, containing some fourteen bedrooms, with a bath between each suite, and one large reception room, in which the officers of the company and their guests find comfortable repose after their labor over books and regular company business, making the service the lighter, will be provided with a commodious plunge bath, into which there will run a stream of fresh water through a four-inch pipe continuously, giving the bath a delightful tinge. The well for the water that will furnish this plunge is now being drilled at the end of the building. The water will not be lost, as there is a very large amount used in the toilets and boilers for which this overflow can be utilized. This town of Balfour when completed will be a model city, one of the best built for an oil camp.

A rumor that will not down is to the effect that John A. Bunting is about to close a deal with the Associated Supply Company to take over his plant here, which consists of the best equipped oilwell tool shop this side of Los Angeles; foundry, pipe-cutting shop, fishing tools, the boiler shops, and a full equipment. This will be in the place of the proposed shop of the Associated Supply Company, and will be in conjunction with the Associated store that is being established here. With this the Associated steps to the front as the best equipped oilwell tool company in this field.

There is carried in stock in the three yards in this town at this writing at least $500,000 worth of oilwell casing. These are the yards of the National Supply Company, representing the National Tube Company, manufacturers of fine steel casing; the Reading Iron Company, manufacturers of iron casing; the Youngstown Sheath & Tube Company, manufacturers of steel casing, represented by the Oil Well Supply Company. The South Chester Tube Company, manufacturers of iron casing, represented by J. F. Lucey. Less than two years ago there were only two of the great manufacturers of casing represented here; today we have the four leading manufacturers of both iron and steel casing represented. Each of the supply houses is carrying a full line of rig irons, engines, and the numerous supplies that are required for the drilling of an oil well.

The Coalinga Oil Producers Agency turned into the pipelines of the Associated Oil Company during the month of June 110,000 barrels of oil, representing the neat sum of $71,500. There is a large amount of oil going out as royalty to the Southern Pacific which is not included in the statement of oil produced and shipped for June, 1908. During the month of June the production from this field was 840,200 barrels, not including some independent oil that has been shipped by rail and the oil used as fuel in the development of wells in this field.

The Pleasant Valley Hotel Company has awarded the contract for the building to John Zapp of Fresno. The contract price is $30,000. The plans were formerly accepted at a meeting of the company on Monday last. The building will be a three-story and basement. Several parties are figuring upon a lease of the hotel. Excavation for the basement was begun on Monday last. This will be 75x100, with eight-foot walls.

The Traders Oil Company, section 24-20-14, has acquired the holdings of the Angelus Oil Company, section 26-20-14; the Euclid, the Marengo and the Norse Oil companies in section 24-20-14. In this reorganization the new company will be the Traders Oil Company, capitalized at $1,100,000. The directors and officers are: M. V. McQuigg, president; A. J. Wallace, secretary; J. Benson Wrenn, manager; W. C. Price, A. J. Seamans, J. L. Carter, M. V. Avery and two others. The reorganization was effected on July 9, 1908. This makes one of the best-paying propositions in the field. The wells are all new and good producers. The property is well equipped and worked economically. Has a fine water system, ample boiler capacity; has one of the most perfect electrical plants in the field, furnishing lights for all of the property. The arrangement for the handling of the gas upon this property is far ahead of any other plant in this field, a system worked out by J. Benson Wrenn.

Coalinga was favored with a short visit by some of the officials of the Southern Pacific recently, who came in on the Pullman cars Sierra Nevada and Los Angeles. It is supposed they came to view the much-needed spur tracks in the new railroad yard west of the "Y." That much work is needed on this branch road is indicated by the fact that the freight train bound west (to Coalinga) had to be cut into three sections on July 11th at Lemoore, so that the regular passenger and freight out from Coalinga could pass. The growth of business of the railroad company on this branch may handicap the company on account of shortage in trackage to handle the business, but the oilfield business deserves far better treatment than it is receiving.

The telephone company has installed an auxiliary toll position (an extra switchboard) to help out long-distance calls. The work of placing this important work in position was performed by Guy Williams, one of the company's expert workmen. The long-distance branch of the company's service has increased to that extent that the local manager has placed one operator in charge of the long-distance switchboard, while two operators are employed on the local board. This improvement in the long-distance service will be of great advantage to oil men.

The W. K. Oil Company, section 2-20-15, redrilled and deepened well No. 1 from 2740 feet to 3140 feet, and has brought in a fine well. On last Thursday the well commenced to flow. Three lead lines were hardly enough to carry off the product. It was estimated that for a time the well was doing about a 3000-barrel clip. She has steadied down to about a 1500-barrel production. This well did about 150 barrels before she was deepened.

There are numerous rumors of two and three-story brick buildings to be built about town in the very near future. The Bennets are going to build a brick adjoining the Coalinga Hotel; the Cheeneys a brick building where Joe Lacey's shop now stands. May & Kerr have discussed the building of a two or three-story building on the corner of Fifth and E streets. The Oil Well Supply Co. is to build on the corner of Front and Sixth streets, to accommodate the increasing business.

The Kern Trading and Oil Company, section 35-19-15, has out specifications for a 10,000-barrel steel tank for this camp. We are to presume that the Bunting Iron Works will be among those who will bid on the work, as the work done on the 37,000-barrel tank for the Associated on section 8-21-15 has been accepted as well done.

The California Monarch Oil Co., section 26-19-15, has about finished the job of redrilling well No. 1. The field manager expects to see this well producing again by the end of the month at the latest. Well No. 2 will be drilled to the lower sand. The sand got in the W. K. Oil Company's well No. 1; work on this well will be resumed this month.

The management of the Confidence Oil Company, section 31-19-15, has determined upon some active development work on this prop-

erty in the very near future. Mr. Hutchinsou, superintendent, will try and clean out a few of the old wells before starting the new work. The Confidence has 160 acres in this lease.

Notes About Town.

Mr. Fillittson has convassed this city for a city and field directory. The gentleman has been very thorough in his work, and this enterprise should meet with public approval. Three years ago such a step would have caused unpleasant comment; today it shows the constant growth of field and town.

Frank Cleary, president and manager of the Confidence Oil Commany, has gone to the high Sierras to join Mrs. Cleary and son, where, amid the fragrant pines, tamarack and fir, he will seenre rest much needed, away from heat of climate and worry of business.

I. J. Truman, Jr., an attorney of San Francisco, and R. L. Rader of Oakland, accompanied by T. J. Bonneau and E. J. Seeley of Goldfield, paid the south field a visit Sunday with an auto, going as far as township 25 S, 19 E., about 15 miles below the El Cerrito Oil Company.

The California Diamond Oil Company, section 12-19-15, is now in a position where they will soon be drilling, having the hole in well No. 5 about cleaned out. Superintendent Art. Anderson will go to the Graham-Tavern sand.

The B. & B. Oil Company, section 12-20-14, is to install two 60 H-P boilers, the Bunting Iron Works has the contract. The work will be done under the direction of Joe Long.

The California & New York Oil Company, section 12-20-14 (P. M. D. & O.), has cleaned out well No. 2; will install a Dickinson Special Wire Line pump. The fluid stands about 1000 feet in the hole.

The California Oilfields, Ltd., are to install a private exchange in their town of Balfour, which will be of great service to the company and an accommodation to the business public that have business with the company.

SANTA MARIA.

The Union Oil Company is starting work on its well at the north end of the Bell Estate property, adjoining and just across the line from the Palmer well No. 1. It is a significant fact that the Union Oil Company owns or controls property immediately adjoining every producing well in the field. This company is also drilling on the Arellanes ranch, a short distance southeast of the old Claremont well.

The Pinal Oil Company is going on with its work as usual. This company is now shipping on a new contract by way of Gaviota, through the pipeline of the Associated Oil Company; this is in addition to its regular contract with the Standard Oil Company, for shipment via Port San Luis.

The Dome Oil Company has brought in its No. 4 well, which is apparently a good producer, although not yet cleaned up sufficiently to learn its average daily production. This company is really the only producer in the field which has not contracted its crude; and, with the present demand for oil, bids fair to market its production at quite an advance over the price received by the other operators.

The New Pennsylvania Petroleum Company is just about ready to put its No. 5 well on the pump. This well has shown promise of being a good producer. Its No. 3 well did not come quite up to expectations, although it is a fairly good producer. This company delivers its entire production to the Standard Oil Compauy.

The Coblentz Oil Company has changed its management, among the new directors being T. R. Finley, L. C. Mau, F. Twitchell and Frank Gates. While the future policy of the company has not yet been decided upon, it is probable that the work on its No. 2 well will be continued, as it is in a good location and down about 900 feet.

The pumping plant of the Asociated Oil Company, situated on its Williams property, near the Palmer well, which will be used for pumping the Palmer oil to Gaviota, will be quite extensive. There is a 30,000-barrel tank almost completed, and there will be several smaller tanks, heating aparatus, boiler battery, all necessary to handle the 16 gravity oil from this district. It will also be necessary to have other heating stations along its line to Gaviota to keep the temperature of the oil sufficiently high to pump through readily.

The Associated company has been quietly acquiring and tying up more property in the vicinity of its Williams well, in the Cat canyon and Foxen canyon district, so it is apparent that this company at least has faith in the ultimate productiveness of this territory. With plenty of fuel and water now obtainable, the cost of drilling has been materially reduced, and the new pipeline transportation soon to be available will undoubtedly prove an additional inducement to other companies owning oil land there, to begin drilling.

The Stendel well, situated a couple of miles east of the Palmer, and controlled by the latter company, is down in the neighborhood of 2000 feet, with what is claimed to be a good showing of oil and gas, and has passed through much sand. At present this well is hung up with a fishing job.

The Sisquoc Oil Company, an offshoot of the Hall & Hall interests, situated a little north of the Stendel well, is drilling, but is hardly deep enough to give an idea of its prospects.

Reports from the Huasna district are quite discouraging, and while there are abundant indications of oil in that field, the present operators do not seem to have drilled at the right points as yet.

The work of the Santa Maria Oil Association in the southern end of the old field in shutting off the troublesome water is still going on with the same satisfactory success, and although it has yet to be determined whether or not the improvement will be permanent, it has surely had an immense influence upon the production of that part of the field, and has encouraged the oil companies to feel coufidence in the future development of their properties.

One of the features developed by the operators of this association has been the feeling that it is much more desirable to use as little water as possible while drilling through the oil carrying formations, as the enormous pressure produced by a hole full of water carries much of it into the sands, proving troublesome when the well is put to produciug, as well as affecting neighboring wells.

Some time ago one of the rotary drilling apparatus concerns was through this field endeavoring to interest companies here in its machinery. There was much claimed for this style of drilling through sand, and two companies at least would have been glad to try a rotary, but that these people wanted too high a price, and some of it cash down, for the use of their machinery. If the rotary people are anxious to come into the Santa Maria field, and have sufficient confidence in their ability to get down through the sand, there are companies here who would contract with them to put down holes for them, with the proviso that when the hole is completed and cased off for a certain depth, that the contract price should then be paid; but they would be unwilling, no doubt, to try such an experiment, and bear the entire cost of it, themselves.

The total production for the Santa Maria field for the month of June was about the same as in May—approximately 750,000 barrels. Shipments were slightly in excess of this, with a consequent reduction in oil carried in tankage. Very little crude is held in storage now, as the demand has been for some time past, and apparently will be for some time to come, largely in excess of the production, and producers find all their crude, in excess of that contracted for, snapped up at advanced prices.

Salt Lake.

So far as the Salt Lake field is concerned, the rotary rig, about which there has been so much speculation, seems to have come to stay. At least(it has been accepted as a success by the Amalgamated Oil Co., which has given it a thorough try-out on one of its wells on the Hammil & Denker ranch, near Sherman. The time saved in getting the hole down, and the further fact that but one string of casing is necessary, reduces the cost of a well so materially that, where the formation is favorable, as it seems to be here, the rotary is likely to replace, in a measure, the standard rig. The Amalgamated has three derricks built in the vicinity of the well just being completed, and will install three rotary rigs at once. The American Petroleum Co. and the McDor Oil Co., both operating near this point, will each install a rotary in their respective properties as soon as they can be secured.

Nothing especially new has developed in this field during the past month in the way of extension. Clampett Brothers' wildcat near Sawtelle, about seven miles in advance of developments, is about 1800 feet deep, but the oil sand has not yet been tapped. It is said, however, that the showing made has caused considerable excitement in the town of Sawtelle, and land values are taking on a heavy advance, many property owners apparently thinking they have a great body of oil under their land. In fact, most of the land in the vicinity near the mountain range has already been taken up on lease or purchase, but the holders are awaiting developments.

All operating companies in the Salt Lake field are rushing new work to the limit. The Amalgamated Oil Co. is now drilling extensively on its holdings in the eastern limits of the district toward the old city field, where they have several rigs running and a number of new derricks up. This territory is much shallower than that located farther west, and seems to indicate that the Amalgamated wants oil, and lots of it.

The American Petroleum Co. is running five strings at Sherman Junction, and shipping oil as fast as it is produced. The Los Angeles Pacific Railway, since its tracks have been widened to

broad gauge, is able to run the large tank cars on that line, which connects with the Associated Oil Co. loading station at Redondo, where much of this oil is now going. In fact, the Associated and Union are both now shipping oil from the Salt Lake and Fullerton fields to northern and foreign points—the former from Redondo, and the latter from San Pedro. It is said that the total shipments from these two points amounts to 125,000 barrels per month. Most of it goes to Northern California, Washington and Oregon points, and some to South America and Hawaii. This has relieved the local market to a great extent, which was threatened with a surplus for a time, but the market is now firm and prospects are as bright as in any district of the State.

There is a possibility of there being some big deals made in oil properties in some of the southern fields. Representatives of large money interests in the East are now in Los Angeles investigating the merits of different properties. Philadelphia parties have secured a 30-day option on one of the most promising properties in the Salt Lake field at a price approximating $1,500,000. The property consists of nearly 300 acres, has seven completed wells and is proven by adjacent developments to be good—or at least three-quarters.

There are also rumors of a big deal pending in the Fullerton field involving a million and three quarters. It is also Eastern parties who are figuring on this property.

In fact, there seems to be quite a demand, notwithstanding the apparent high figure at which they are held, for lands already producing. The investor seems more willing, for instance, to spend his money on a sure thing, even if it takes a little more, rather than engage in the doubtful operation of wildcatting. Even the Standard, although wildcatting in California on a more extensive scale than it ever has in its history anywhere, is constantly buying production, and is paying a fair price for it, too. The price paid for the 160 acres bought from Porter and Scribner, in the Midway district, reported last week, was, it is stated by men familiar with the property, all the property was worth. The Standard is still looking for production, especially in those fields producing the lighter grades of oil.

There is some prospecting being done in different sections, where in the early days shallow holes were put down, but demonstrated nothing owing to their depth. On the Bixby ranch, near San Pedro, where eight years ago four or five companies were prospecting, there are now two concerns going in. These companies have good backing, and with their modern equipment will prove the territory, at least. The surface indications are said to be very favorable, there being outcroppings at intervals which denote the presence of oil. The companies' operations are being watched with interest.

At Newport the Newport Bay Oil Co.'s No. 2 is now down about 2800 feet. Drilling is being continued and the real oil sand is expected at any time. Several strata have already been passed, but not enough oil showed to warrant stopping the drill. No. 1 is not doing anything, as trouble was experienced with water, and although the product which was found at 2700 feet is of a high-grade gravity there is not enough of it produced to make much of a showing. The Fairview Oil Co. is also drilling in this section, but is not down to a depth yet where oil is expected.

To come back to the Salt Lake field, there are about 35 strings of tools running. The daily output is about 12,000 barrels, and every barrel is shipped as rapidly as produced. The old city field is still producing about 45,000 barrels per month. This is all marketed by tank wagon locally, being used by different manufacturing concerns, hotels, etc., in Los Angeles. The price on contract oil remains at about 60 cents, while cash oil is sold at from 75 cents to 90 cents per barrel.

Fullerton.

The Fullerton field is fast becoming an important factor in the industry in the southern part of the State. The output is rapidly increasing, and territory heretofore untouched is being drilled and showing up for what is called "big stuff." A 200-barrel well in this field is coming to be considered only a—well, a fair well.

The Associated has recently been bidding for production in this field, and the Union, which has hitherto controlled the output here entirely, bids fair to have a strong competitor. The Associated has a right of way from the field to Los Angeles, and if enough oil can be tied up on contract to warrant it, will build a pipeline. In the meantime the Union's pipeline and the Santa Fe Ry. spur to the field are both busy taking care of the output.

The Union is running six strings of tools on its property between the original Olinda field and Brea canyon, and is securing splendid results. It looks as if the entire intervening territory were gilt-edged. Some of these wells are settling down into steady 500-barrel producers, starting off at much better than that.

Graham and Loftus are in the sand in their No. 2 in Brea canyon, and a big well seems to be a certainty. On its tract at Olinda four strings are running, and big wells are the result.

THE BRITISH CONSOLIDATED OIL CORPORATION, LTD.

There has been organized in London, for operation in the Coalinga oilfield, in Fresno county, California, a strong company registered as The British Consolidated Oil Corporation, Limited. The authorized capital stock is 200,000 pounds, divided into ordinary shares of a par value of 1 pound each. The company has also authorized issuance of 100,000 pounds 6 per cent first mortgage convertible debentures of 20, 50 and 100 pounds each, at par. The United States Debenture Corporation, Ltd., London, is trustee for the debenture holders; Price, Waterhouse & Co., London and San Francisco, are the company's auditors.

The directors are: Sir Robert Alfred Hampson, Kt., chairman U. S. Debenture Corporation, Ltd., (chairman); Sir Thomas Anderson Salt, Baronet, director Staffordshire and Worcestershire Canal Co. (vice chairman); William Henry Peach, J. P., director Stafford Salt and Alkali Co., Ltd.; John Cecil Grant McFerran, electrical engineer W. O. Rooper & Co., contractors to H. M. Admiralty.

Secretary and offices: J. J. Cornell, 835 Salisbury House, London.

Sir Boverton Redwood, advisor to the home office of H. M. Admiralty, has agreed to act as technical advisor to the company; Mr. Arthur W. Eastlake, M. Inst. M. E., has been retained as engineer to the company, and will direct the work of development.

The properties acquired by the company include the following described acreage and wells, in townships south, range east, Mount Diablo meridian:

(1) 67 acres in (SW. ¼) Sec. 12, 19-15; 1 well drilling.
(2) 160 acres in (SE. ¼) Sec. 26, 19-15; 1 well producing, 1 drilling.
(3) 40 acres in Sec. 31, 19-15; 3 wells producing, 1 standing.
(4) 120 acres in Sec. 31, 19-15; 5 wells producing, 3 standing.
(5) 240 acres in Sec. 4, 20-15; and
(5A) 40 acres in Sec. 12, 20-14; 4 wells producing.
(6) 640 acres in Sec. 24, 21-15.
(7) 80 acres in Sec. 28, 21-15.
(8) 160 acres in Sec. 30, 21-16.
(9) 160 acres in Sec. 28, 21-16.
(10) 160 acres in Sec. 6, 22-16.

The summary of the reports made to the company by Sir Boverton Redwood, Mr. Eastlake and Mr. William Forstner (field assistant California State Mining Bureau) show that the properties numbered (as above) 1 to 5 inclusive, containing 667 acres, are within the proven oil producing territory of the Coalinga field; and that the properties numbered 6 to 10 inclusive, containing 800 acres, have a prospective value; and that in the aggregate territory of 1467 acres there is room for putting down of 275 additional wells. The report states that the 4 standing wells are proven producers, but are not now producing, owing to accidents occurring in the course of drilling operations.

Price, Waterhouse & Co. report to the company that the records of the thirteen producing wells show that in the fourteen months ended Feb. 29, 1908, the net production, after deducting royalties on such lands as are under lease amounted to 330,042 barrels. By carrying out the work of development as suggested by Sir Boverton Redwood and Mr. Eastlake, the company estimates that the production may be doubled in the coming year.

The report of the engineers further states that the producers in the Coalinga field are fortunately situated with regard to marketing facilities, the purchasers in the field being the Standard Oil Co., the Associated Oil Co., the Union Oil Co., the Coalinga Oil and Transportation Co., the Southern Pacific Co. The Coalinga field has three pipeline and one railroad connection with the seaboard, and the Southern Pacific is extending a new pipeline to Sacramento in the northern interior of the State. So the marketing and transportation facilities of the Coalinga field are assurances of the successful operation of the proven territory in the field.

The properties of this company, numbered 1, 2, 5, 6, 7, 8, 9, 10 (containing 1,267 acres) are held by title direct from the United States Government by freehold mineral location; the properties numbered 3, 4, and 5A (containing 200 acres) are held by the companies making the transfers to the British Consolidated under leases that have 12½ and 15 years to run. Properties 1, 2, 3, 4, 5 adjoin the properties of the California Oilfields, Ltd.

The purchase price, named in the agreement of March 25, 1908, and modified July 2, 1908, is 169,000 pounds, paid in pro rata of ownership to the following named holders of the shares, lands, wells and appurtenances: Maine State Oil Co., Guthrey Oil Co., California and New York Oil Companies Consolidated, Diamond Oil Co., Express Oil Co., John J. Meyers, C. F. Humphrey, and others of San Francisco, and G. G. Williams of New York.

The promotion of the company and the transfer of the oil lands, and shares, etc., included in the organization was accomplished by Mr. Humphrey, who went to London for the purpose; the vendor named in the agreement under which purchase was made is Edward P. Antron, of San Francisco.

Recorded by

San Francisco Marine Exchange

and the

United States Government

The Toyo Kisen Kaisha (Oriental Steamship Co.) has two of the largest oil-fired passenger steamers in the world, running between San Francisco and China and Japan, and is having a third one built for the same trade. The Tenyo Maru (Heaven and Sea) and the Chiyo Maru (Earth and Sea) are practically alike in construction, having triple screws, Parson turbine engines, Scotch boilers, and the Lassoe Lovkin and Howden type of oilburners. The Tenyo Maru, Captain Going, made her maiden trip from Hongkong arriving at San Francisco on July — and departing on July 11. In a brief interview with Chief Engineer E. H. Seaber the California Derrick obtained the following information regarding the Tenyo Maru. There are 13 boilers in all, 12 of which are fired with the Lessoc Lovkin oilburner, the thirteenth is a tank boiler fired with the Howden type of oilburner. Twelve boilers and 48 burners were in action on the trip over from Hongkong, the average speed was about 20 knots; from Honolulu, running against head winds and under adverse conditions, the ship made 18.25 knots an hour, with 12 boilers in action and burning about 210 tons (about 1,400 bbls.) of oil per 24 hours; the engines at that speed generated about 17,0000 to 18,000 H-P. The oil tanks are built in with the ship, and in the event of the necessity the ship can be readily rearranged for carrying coal fuel; the oil tanks have a capacity of 3,000 tons, or about 21,000 bbls. Chief Seaber described the oil as "Monterey" oil of 17.5 to 18 gravity Baume. The fact is that the oil is a Kern county product that is shipped by water from the Monterey pipeline station of the Associated Oil Co. to Honolulu supply station. Chief Seaber expressed a decided preference for oil fuel over coal fuel, and stated that the crew necessary for the operation of oilburners numbered a total of only 42, as against 80 to 100 that would be required if coal fuel were used; besides this economy, there is no cleaning of boilers every 24 hours as is necessary with coalburners, thus a greater efficiency and constancy of speed is secured, and with a reduction in the cost of fuel.

The Str. Daisy, Captain H. B. Smith, owned by the Freeman Steamship Co., San Francisco, completed her maiden trip returning to San Francisco July 7 from Puget Sound with lumber for San Fraacisco and Oakland. Chief Engineer W. G. Perow stated to the California Derrick that the vessel had made 589 miles in 67 hours, an average exceeding 8.75 knots and carrying 790,000 feet of lumber; the oilburner plant and the general performance of the vessel exceeded the expectations of the chief engineer and the captain. Chief Perow stated that on leaving San Francisco June 26, the first day out, the steamer ran against strong head winds and the engines were set at full speed of 155 lbs. steam, averaging 105.6 revolutions per minute and a speed of between 7 and 8 knots per hour; on the return trip the first day out the average revolutions per minute was 116; second day, 118; third day, with a bit of head wind, 115.25, with a consumption of 55 bbls. of oil. As stated in the California Derrick for June, the oilburners are the Staples & Pfeiffer type, installed by the United Engineering Works, Alameda.

The Br. Str. Tanawanda arriving at San Francisco July 27 in ballast to the Standard Oil Co. under charter, departed for Shanghai with oil.

The British tank Str. Tuscarora, Captain Hollingshead, under charter to the Standard Oil Co., arrived at San Francisco July 27 from Shanghai, having made the record run, for a tank steamer, of 57 days for the round trip between San Francisco and Shanghai. She returned to Shanghai with a cargo of oil.

The Associated Oil Co. tank str. W. S. Porter, which made the initial trip from Nome for the present season, sailing from San Francisco on July 4 with 50,000 bbls. of oil, arrived at her destination July 28, after having reported in disaster.

Commissioner of Immigration North, acting under instructions of the Secretary of Commerce and Labor at Washington, has completed negotiations with the United Engineering Works, Alameda, for a 70-ft. steel oil-burning launch to be finished in 90 days, to be used by the Immigration Bureau for carrying passengers between Angel island and the mainland, pending the construction of the regular ferryboat. The launch will be put in commission about Nov. 1, when the offices of the Immigration Bureau will be transferred to the island. The launch will accommodate about 100 passengers, and will cost $220,000.

REFINED OIL SHIPMENTS.

By Standard Oil Co. from Richmond Refinery.

1908.	Vessel.	Shipped to	No. Gals.
June 21	Br. Str. Ashtabula	China	2,446,469
23	Br. Str. Appalachee	China	1,380,000
25	Br. Str. Dakotah	China	1,590,000
July 1	Br. Shp. Comet	Kobe	1,288,130
11	Br. Str. Seminole	China	2,132,100
	Total		8,836,699

By Miscellaneous Shippers from San Francisco.

June	16	Jap. Str. Nippon Maru	Japan	1,100
	17	Str. Mexican	Honolulu	2,750
	17	Str. Enterprise	Hilo	1,100
	19	Str. San Juan	Central America	2,450
	22	Str. President	British Columbia	4,550
	23	Br. Str. Asia	Japan	3,000
	25	Bktn. S. G. Wilder	Honolulu	9,000
	24	Brk. R. P. Rithet	Honolulu	900
	27	Str. Indiana	Central America	1,260
	27	Ger. Str. Theben	Central America	10,800
	30	Fr. Str. Amiral Duperre	Mexico	1,550
July	2	Str. Hilouian	Honolulu	2,650
	2	Str. City of Puebla	British Columbia	11,000
	2	Str. Texan	Honolulu	16,950
	4	Str. Alameda	Honolulu	600
	4	Br. Str. Aeon	Australia	2,950
	6	Brk. Annie Johnson	Hilo	300
	7	Str. City of Sydney	Central America	2,200
	7	Str. President	British Columbia	700
	11	Jap. Str. Tenyo Maru	Japan	150
	12	Str. Governor	British Columbia	3,200

By Union Oil Co. from Oleum Refinery.

July	2	Str. Santa Rita	Honolulu	2,000
		Total		54,360

CRUDE OIL SHIPMENTS FROM CALIFORNIA.

By Standard Oil Co. from San Francisco.

1908.	Vessel.	Shipped to	No. Bbls.
June 16	Str. Col. E. L. Drake	Seattle	40,000
17	Str. Atlas	Portland	20,000
22	Str. Maverick	Portland	20,000
25	Str. Col. E. L. Drake	Portland	40,000
28	Str. Atlas	Seattle	25,000
28	Brg. Ninety-one	Portland	25,000
July 8	Str. Maverick	Seattle	20,000
11	Str. Col. E. L. Drake	Portland	40,000
11	Str. Asuncion	Seattle	22,000

By Union Oil Co. from San Francisco.

June	20	Str. Argyll	Seattle	25,000
	27	Str. Roma	Vancouver and Seattle	29,000
July	2	Str. Santa Rita	Honolulu	14,000
	12	Str. Santa Maria	Kahului	28,000

By Union Oil Co. from San Luis Pipeline Station.

June	18	Str. Santa Rita	Oregon	45,000
	27	Str. Whittier	San Diego	10,000
	29	Str. Argyll	Oregon	25,000
July	3	Str. Santa Rita	Honolulu	43,000
	6	Str. Whittier	San Pedro	10,000
	8	Str. Whittier	San Pedro	10,000
	13	Str. Santa Maria	Kahului	20,000

(From San Pedro.)

	11	Str. Roma	Portland	29,000

By Associated Oil Co. from Monterey Pipeline Station.

June	24	Str. Rosecrans	Portland	25,000
	24	Sch. Monterey	Portland	17,000
July	6	Str. Rosecrans	Honolulu	23,000
	6	Sch. Monterey	Honolulu	15,000

(From Gaviota Pipeline Station.)

June	17	Ship Falls of Clyde	Honolulu	17,000

By Coast Oil Co. from Gaviota (to Oriental S. S. Co.).

July	3	Br. Str. Pinna	Yokohama	60,000

By Miscellaneous Shippers.

June	18	Str. Arizonian	Honolulu	6,500
	17	Str. Mexican	Honolulu	4,000
		Total		707,500

New Oil Company Incorporations.

Fresno.—Circle Oil Co., capital stock, $100,000, sub. $50, by T. A. O'Donnell, L. Burns, L. A. McCray, O. G. Myers and W. L. Leland, 10 shares each.

Fresno.—Bishop Oil Co., capital stock $300,000, sub. $50, by C. A. M. Swain, W. G. Cochrane, L. A. Teague, E. R. and Ralph Bishop, 10 shares each.

Loveland Oil Company; capital stock $25,000; subscribed $70; by E. H. Loveland, T. W. Helm, G. T. Kinkade, C. A. Lee and others. Place of business, Bakersfield.

St. Lawrence Oil Co; capital stock $100,000; shares $5 each; subscribed $15; by A. Y. Hardenburgh, M. L. Friedlander and J. D. Lederman, 1 share each. Place of business, San Francisco. J. D. Lederman, attorney.

Pilot Oil Co., authorized capital stock of $100,000 in 100,000 shares; $500 subscribed by H. J. Doulton of Santa Barbara, G. A. Scot of Berkeley, H. G. Anderson and R. W. Dallas of Coalinga and R. D. Jones of Fresno. Place of business, Fresno.

The Amalgamated Oil Co. has filed articles of incorporation in Kern county. The directors are W. C. Price, W. S. Porter, J. E. Bamberger, J. A. Chanslor and J. J. D. Wood.

Nicodemus Oil Co., capital stock $1,000,000 in 1,000,000 shares; $700 subscribed by J. E. Wickham, W. L. Tubbs, W. L. Thomas, Chas. Gilbert and others. Place of business, Bakersfield.

Federal Oil Co.; capital stock $1,000,000, in 1,000,000 shares; $25 subscribed by John Barneson, N. H. and I. H. Frank, C. A. Shuey and Milton Newmark. Place of business, San Francisco.

Domengine Oil Co. of Coalinga; capital stock $100,000, in 100,000 shares; $50 subscribed by T. A. O'Donnell of Los Angeles, J. F. Lucy, R. L. Peeler, C. Peeler and J. W. Gauthier of Coalinga.

Submarine Oil Co.; capital stock $1,000,000. Directors: H. B. Pearson, F. N. Burger, D. S. Elder, I. R. Elder, G. A. Carter, J. M. Eshelman and P. P. Hovey. Place of business, El Centro.

Zaca Oil Co., San Luis Obispo; capital stock $500,000; par value $1; by J. B. Bennett, W. T. Lucas, James Lartora and T. R. Finley of Santa Maria and F. S. Scott of Santa Barbara.

Beverly Oil Co., Los Angeles; capital stock $600,000; par value $1; by W. D. Wilson, E. P. Bryan, W. R. Wheat, S. H. Sloan and L. T. Bradford, all of Los Angeles.

Babcock Petroleum Co., Bakersfield; capital stock $1,000,000; by F. W. Babcock of Providence, R. I.; E. E. Powers, W. H. S. Welch, L. R. Powers and F. M. Notman, all of Los Angeles.

Black Canyon Oil Co., San Francisco; capital stock $1,000,000; par value $1; W. H. Pabst, C. Withers, C. A. Davis, J. B. Batz, A. F. Rodgers, C. A. Slack and J. H. Jordan.

Topez Oil Co., Bakersfield; capital stock $50,000; by J. H. Sheridan, O. McReynolds, Robert H. Avery, H. W. Thomas, Charles Ball.

Seneca Oil Co., Fresno; capital stock $250,000; par value $1; by J. A. Ward, W. W. Eden, L. O. Stephens, P. C. Taylor, G. L. Warlow and Ella Ward.

Monterey Oil Co., Santa Barbara; capital stock $100,000; par value $100; by J. B. Bonetti, Joseph McDonnell, T. R. Finley, H. H. Bardin and H. H. Jesse.

West Coalinga Oil Co., Fresno; capital stock $50,000; par value $1; by Eugene Adams, H. S. Davis, C. V. Gormley, A. P. May, John Wells, and others.

North Limited Oil Co., Hanford; capital stock $200,000; by J. O. Hickman of Hanford, A. J. Graham of Coalinga, and others.

North Extension Oil Co., Fresno; capital stock $500,000; by J. W. Pauson of San Francisco, C. G. Wilcox of Oakland and H. H. Welsh of Fresno.

Arcturiss Oil Co., Bakersfield; capital stock $400,000; by Fred Phillips, W. C. Price, J. D. Wood, C. O. Morgan and W. E. Mitchell.

Salt Lake Oil Co., Bakersfield; capital stock $500,000; by J. D. Wood, J. E. Bamberger, Fred Phillips, W. C. Price and C. O. Morgan.

Walker-Heek Oil Co., Los Angeles; capital stock $150,000, by Hattie Malloy, K. H. Kennedy, G. W., Margaret S. and Ethel G. Walker.

Pasadena-Barstow Oil Producing Co., Pasadena; by H. R. Slayden, Don Ferguson, F. C. Rockwell, W. P. Smith and E. B. Armstrong of Pasadena, O. M. Lowell, G. E. Roth and G. D. Hutchinson of Barstow et al.

Henderson Oil Co., San Francisco; capital stock $500,000; par value $100; by B. F. Brooks, T. B. Berry, T. C. Berry, H. C. Wyckoff and J. E. Gardner, 1 share each; place of business, San Francisco.

People's Associated Oil Co.; New York; capital stock $1,000,000, par value $1; by S. C. Burr (pres.), T. H. Tobey (treas.), E. H. Burr (secy.), E. W. Preston (vice pres. and mangr.).

Cantua Oil Co.; capital stock $100,000; par value $1; by J. E. McCreary of Berkeley, R. H. McCreay of Hanford and S. C. Ward of Los Angeles.

Monterey Oil and Development Co.; Salinas; capital stock $100,000; par value $1; by J. B. Bonetti, J. McDonnell, T. R. Finley, H. H. Bardin and H. H. Jessee, all of Santa Maria.

Castaic Oil Co; Los Angeles; capital stock $437,000; by C. M. Titus, P. F. McCool, G. M. Lashley, J. A. Wilforth and A. E. Kempe.

Hanford Sanger Oil Co.; Los Angeles; capital stock $300,000; by D. R. Sanger, J. F. Roach, W. B. Charles, B. L. Barney and W. W. Parlin.

Little Five Oil Co.; Fresno; capital stock $250,000; by A. T., J. H. and F. R. Ellis, G. W. Hutchinson and J. O. Taber.

F. M. Oil Co.; Fresno; capital stock $500,000; par value $1; by T. G. Hart, F. M. Helm, Jacob Clark, J. J. Anderson and A. W. Anderson.

California Oil Products Co.; Stockton; capital stock $1,000,000; par value $1; by J. J. Smith, C. M. Weber, F. H. Armburger and Jacob Simon.

The Arena Oil & Development Co. has been incorporated with H. Hollenbeck, J. D. Hicks, E. E. Bush, D. S. Ewing of Fresno and C. E. Boyd of Coalinga as directors. The capitalization is $100,000, divided into 2,000 shares, par value $50. The company has acquired a large tract of land in Mendocino county and will commence operations at an early date.

Point Arena Oil & Development Co.; Fresno; capital stock $100,000; par value $50; by W. H. Hollenbeck, J. D. Hicks, E. E. Bush and D. S. Ewing.

West Coast Oil Co.; Los Angeles; capital stock $5,000,000; by W. S. Porter, E. H. Buck, W. F. Herrin, J. A. Chanslor, O. Scribner, B. E. Green and M. H. Whittier.

Eclipse Oil Co.; San Francisco; capital stock $50,000; par value $1; by W. W. Nellis, T. Sullivan, R. L. Atkins, E. Denicke and F. M. Graham.

Royalty Oil Co.; Fresno; capital stock $20,000; by R. A. Goble, E. M. Harris, T. V. Doub, H. H. and W. F. Chandler.

Ballona Oil Co.; Los Angeles; capital stock $100,000.

Grador Oil Co.; Los Angeles; capital stock $250,000.

California-Pittsburg Oil Co.; San Francisco; capital stock $100,000; par value $1; by J. J. Walsh, I. A. Ryaut and H. M. Hunter.

Ibex Oil Co.; Los Angeles; capital stock $10,000; sub. $300; by H. G. Cates, E. E. Cates and C. C. Harris.

Sans Souci Oil Co.; Los Angeles; capital stock $10,000; by T. A. O'Donnell, L. A. McGray, J. S. Torrance, W. L. Stewart and Giles Kellogg.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for The California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Well-packer, Lawrence E. Robinson, Butler, Pa., 881,154.

Gas-filter, Christian N. Olsen and Axel P. Petersen, Jersey City, N. J., 881,483.

Pipe-grab, Walter S. Seaman, Beaver, N. D., 881,496.

Holder for drill-rods and pipes, Samuel L. Brannan, Garden City, Kans., 881,659.

Rope-grab, Lawrence Stephens and Earl L. Stephens, Macksburg, Ohio, 881,736.

Jar for drilling wells, Charles M. Heeter, Butler, Pa., 881,923.

Pumping-jack, Luther R. Stone, Munden, Kans., 881,972.

Automatic-cut-off, William P. Norris, Sistersville, W. Va., 882,956.

Water or oil well screen, Authey E. Childress and Henry Cathriner, Houston, Tex., 883,085.

Well-boring mechanism (3), James A. Wriggs, Jr., Beaumont, Tex., 883,368, 883,369 and 883,265.

Pumping apparatus for oil wells, Homer G. Barcroft and William H. Crawford, Bradford, Pa., 883,612.

Apparatus for screwing well-casing, William L. Dunn, Santa Barbara county, Cal., 883,630.

Grab tool, John G. Hollingsworth, Lebanon, S. D., 885,478.

Pump for oil wells, Arthur G. Willard, Bakersfield, Cal., assignor to Bakersfield Iron Works, same place, 885,899.

Oil well packer, Alfred Collingwood, Franklin, Pa., 886,114.

Pipe gripper, Wm. F. Barron, Jacksonburg, W. Va., 886,171.

Casing head for oil wells, Richard F. Hadley, Slicker, W. Va., 886,208.

Jarring device, Eugene E. Messmore, Epworth, Iowa, 886,231.

Apparatus for forcing fluid from wells, Jno. W. Waitz, Oil City, Pa., 886,280.

Apparatus for actuating fluids, Rudolph Conrader, Erie, Pa., assignor to John W. Waitz, Oil City, Pa., 886,312.

Well drill, Harvey B. King, Hartford, Conn., 866,704.

Well pulling machine, Oliver D. Kraft and Louis W. Fetzer, Findlay, Ohio, 886,989.

Oil and water well strainer, Harry R. Deeker, Houston, Tex., 880,635.

Clamping ring for pipe couplings, Frank N. Smith, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 880,831.

Toy oil well, Christian Weisenbach and Jacob Weisenbach, Pittsburgh, 880,943.

Well-operating aparatus, James E. Wise, Butler, Pa., 883,769.

Well-tubing, Andrew Smith, San Mateo, Cal., 884,048.

Pipe-coupling, Solomon R. Dresser, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 884,371.

Electric fluid heateer for wells, Mark T. Seymour, Bemus Point, and Alton W. Ball, Stowe, N. Y., 884,424.

Device for cleaning oil wells, Frank A. Monroe, Bemus Point, and Burton W. Seymour, Falconer, N. Y., 884,675.

Pipe coupling, Geo. W. Mason, Sharon, Pa., 884,749.

Grate for gas-producting, Robert Hilprecht, Lansing, Mich., assignor to Olds Gas Power Co., same place, 885,155.

LATEST OIL STOCK REPORTS.
San Francisco Quotations.

Following are the latest quotations for California oil stocks listed on the California Stock and Oil Exchange:

	Bid.	Asked.		Bid.	Asked.
Apollo	$ .02	$ ...	Monte Cristo	.90	...
Asso. Oil Tr. Cer.	31.75	32.00	Occidental	.25	...
Asso. bonds, 5s	79.00	...	Peerless	3.00	...
Chicago Crude	.06	...	Pinal	11.00	...
Claremont	1.30	1.35	Record	1.20	...
Coalinga Pacific	1.00	...	Royalty	1.25	...
Fulton	...	2.00	S. F. & McKittrick.	11.50	...
Graciosa	...	.55	Sauer Dough	...	2.25
Home	.38	...	Sterling	2.20	2.40
Illinois Crude	.11	...	Sunset Monarch	.35	...
Imperial	...	28.00	Superior	.10	...
Junction	...	.50	Thirty-three	1.67½	...
Kern	.10	...	Union	...	240.00
Kern River	6.00	...	Wabash	1.35	1.50
Lucile	3.00	...	Wolverine	.30	.35
McKittrick	.15	...	W. K. Oil Co.	.55	...

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KERN TRADING AND OIL COMPANY

Bakersfield, Cal., District, July 8, 1908.

Mr. L. W. Brown, C. E., Bakersfield, Cal.

Dear Sir:—Referring to the L. W. Brown Oil and Sand Separator, I am pleased to advise that we have 48 of these machines installed on the property of the Kern Trading and Oil Company in the Kern River field, and same are working very successfully. The oil is perfectly free from sand and is being loaded into cars at about one-half of one per cent, which means a great saving to us over the old method of getting our oil cleaned for commercial purposes.

It is interesting to observe the absence of all sump holes and ditches, through which the oil is generally conveyed to the sumps, on the lease, which is a great saving of oil, both in evaporation and absorption, and we estimate that this saving amounts to 10 per cent of the production. I think your machine is the best device, so far gotten up, for the cleaning and saving of oil, and the same will certainly appeal to the up-to-date oil man as being the best and cheapest method of handling and cleaning the oils.

Yours truly,
C. A. HIVELY, Foreman.

KERN TRADING AND OIL COMPANY

Bakersfield, Cal., District, July 1, 1908.

Mr. L. W. Brown, C. E., Bakersfield, Cal.

Dear Sir:—I wish to advise that the burning of gas under our boilers Nos. 1 and 2, at plant 5, as installed by you, is giving best of satisfaction, the fire being perfectly steady, without any fluctuation whatever.

These two boilers have been fired with gas for about 30 days, and they steam evenly and quickly, and cause no trouble whatever in regulating the water.

Yours truly,
C. A. HIVELY, Foreman.

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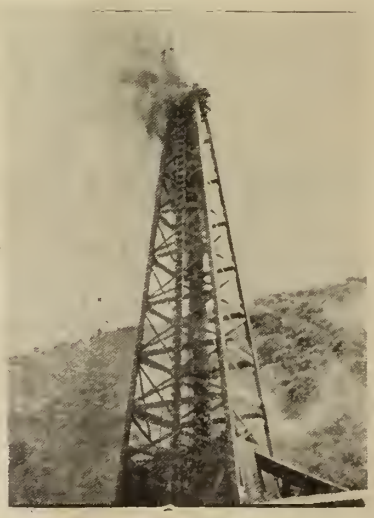

Correspondence Solicited

W. E. Youle, San Luis Obispo, Cal.

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Coalinga	49 x 82	$5.00
Santa Maria and Arroyo Grande	49 x 80	5.00
Santa Maria and East Extension	72 x 44	5.00
Sunset-Midway-McKittrick	39 x 70	5.00
McKittrick & Templor	41 x 66	5.00

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Vol. 1 San Francisco, Cal., October, 1908 No. 8

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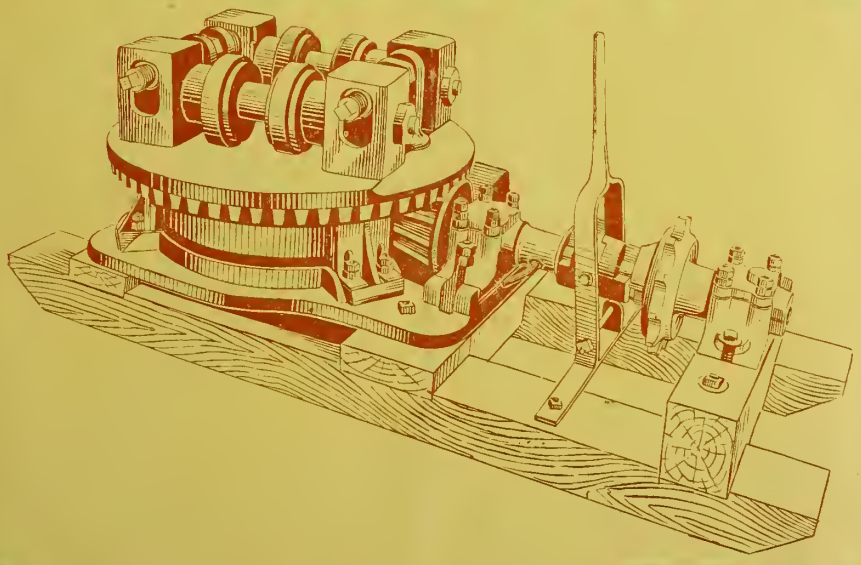

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Vol. 1 San Francisco, Cal., October, 1908 No. 8

A DIAGNOSE OF THE OIL SITUATION IN CALIFORNIA

The quarterly statement of dividends paid by companies listed on the California Stock and Oil Exchange of San Francisco has just been issued. This shows that the sum of $16,561,052.23 has been distributed among stockholders as against $13,780,838.73 up to the statement of July 9, 1908. The sum, therefore, of $2,780,213.50 has been paid during July, August, September, including seven days in October and not including nine days in July. The rate of distribution is $30,000 per day, $1,250 every hour of the day.

In September the sum of $414,612 was distributed by these listed companies, and in the first seven days of October over $115,000. Of the listed companies fifty-nine in number, seventeen paid dividends in September and eight in October up to the seventh. During the year twenty-eight of these companies have been in the dividend-paying list, and only two have not paid dividends since 1905.

While this summary shows the extreme profitableness of the listed oil stocks it does not by any means begin to cover the full situation or give a full idea of the profits distributed. The profits arising from the production of oil in California are considerably greater than is shown by these companies, which are now paying at the rate nearly $12,000,000 annually. The production of petroleum in the State is increasing, but the profits are doubling and trebling. Only a comparatively short time ago oil was selling as low as 12 to 15 cents a barrel. Dividends were slow then. The price has gradually increased until now oil is sold all the way from 50 to 75 cents and a dollar a barrel. If dividends can be paid on 20 or 25-cent oil, how much of the increase in the price is profit? Pretty nearly all of it is clear gain.

The remarkable position of the listed oil companies is attracting the attention of investors the world over. No exchange in the world can point to so great a percentage of dividend-paying stocks as are found on the San Francisco exchange. No exchange in the world can begin to approach this record, no matter how diversified are the industries represented. It is doubtful if any particular line of securities representing any one industry can show such a large percentage of dividend-payers. The amount of money involved is not niggardly either. It mounts into the tens of millions annually. What then of the future?

While the income from the securities represented by these dividend-payers is large and regular, and will continue to be so for a long time to come, the big money will be made in new operations. The price of the listed stocks will naturally advance as dividends are increased, but the new securities will show the same gain in the future and an even greater gain than have those already established on a firm producing and profit-earning basis.

As yet the general investing public has not awakened to the oil situation in California. The Nevada mining boom took the popular interest and has held it, and there is no question that a large number of companies will pay big dividends. This is in the future, however, while the record of oil is here now, in black and white, earning for investors in the now-listed stocks at the rate of $12,000,000 yearly.

As a matter of fact, the public is just beginning to realize the vast importance of oil as a factor in the world's development. The situation is gradually unfolding itself to the people generally. No effort has been made by the larger operators to make public the facts concerning the operations in California, and the press has been extremely negligent of California's greatest industry. It has had no exponent to disseminate the news of developments or to tell what is going on in ways that affect the industry.

Last year oil was the most valuable of California's mineral products. The State has been known as a gold-producing State in the past. In the future it must be known as an oil-producing State. The gold production will not increase materially, while it may be expected that the $17,000,000 production-record of oil in 1907 will be eclipsed by several millions in 1908; by several millions more in 1909; and, if present demands for oil continue or increase as they are now increasing, oil producers of California will be receiving more than $40,000,000 for their product in 1910.

VALUE OF OIL AS FUEL.

Warren H. Frost, representing the Los Angeles Chamber of Commerce, delivered an address at the Irrigation Congress at Albuquerque, N. M., on the "Comparative Cost of Fuel Used in Water Pumping." His address, in part, follows:

"Possibly no fuel is so general throughout the world, or so easily obtainable, as crude oil. As a steam fuel, it has driven coal out of many localities, and is becoming more generally used throughout the world, on account of its compactness and convenience in handling.

"Denatured alcohol, so widely advertised, while legislation was pending, has at yet hardly entered the field of available fuels on account of its artificially high price, but when it is produced at a proper cost, will be a cheap fuel to many localities.

"By proper adjustment, gasoline or distillate engines may be fitted to handle this fuel with great economy.

"Excepting the well-known process of the manufacture of illuminating gas from crude petroleum generally in use throughout this country, hitherto no system has been fully worked out that would transform this convenient and cheap fuel directly into gas for use in gas engines.

"We have the suction gas producer operating on anthracite and bituminous coal, lignites, wood, straw, leather scraps and innumerable other carboniferous materials, and with tremendous economy—but there were difficulties in the transforming of this fluid carbon into a suitable power gas.

"These, however, have been overcome by a recent patented invention. Briefly, the process consists in spraying oil with air into an open chamber having access to the outside atmosphere. The high temperature of combustion disassociates the oil, breaking it up into its gaseous forms, destroying the tar and producing a fixed gas, which is taken out of the producer as formed by the suction of the piston in the gas engine, or other suitable means. The lamp black is washed out with water, and the gas goes directly to the engine. The quantity of oil and air is governed by the engine.

"At the present time, an exceedingly large per cent of the water used in irrigation is pumped with gasoline or distillate engines. This is especially true of Southern California.

Crude Petroleum.

"In making steam with any fuel, the efficiency varies widely according to the type of engine and boiler, but it is generally considered that a compound condensing engine, with high pressure boiler, should give under full load a fuel consumption of one-quarter gallon, or two pounds, of heavy crude oil per brake horse-power hour.

"In very large plants, carefully designed and operated, still higher efficiencies have been obtained, but this is considered very satisfactory in ordinary practice."

THE WORLD'S PETROLEUM PRODUCTION FOR 1907.

The Drug Reporter supplements the valuable report of the United States Geological Survey on the domestic petroleum production during 1907, with a detailed account of the total output of crude petroleum of the world for last year, prepared by Dr. David T. Day, the government's authority on the subject, which appears in another part of this issue. The supremacy of the American industry, which, as we indicated previously, had been strengthened by the developments of 1907, is forcibly demonstrated in the table of comparative results contained in Dr. Day's report. In fact, the actual figures emphasized the American advantage over Russia, our most formidable competitor. The government statistics record the 1907 production in this country as 166,095,335 barrels, while that for Russia aggregated 61,850,734 barrels, a difference of 104,244,601 barrels. The results for 1906 were 126,493,936 barrels for the United States and 58,897,311 barrels for Russia, or 67,596,625 barrels in our favor. The percentage of American production to the total for the world in 1907 was 63.12, Russia's contribution being given as 23½%. The fields of the Far East, including Sumatra, Java and Borneo, occupy third rank in the table of the world's production, but fall far below the Russian position, the former yielding the estimated aggregate of 8,738,302 barrels, or 3.36 per cent of the grand total. Galicia and Roumania are close competitors for third place, the former being credited with 8,360,441 barrels and the latter with 8,118,207 barrels. It is significant that none of the countries included in the government schedule of 1907 records a decline from the 1906 production, except possibly Italy, the returns for which in 1907 are estimated at 53,500 barrels, against 53,577 barrels in 1906. The grand total of all countries for last year is accordingly augmented to 262,212,299 barrels, or 49,311,399 barrels more than the previous aggregate. An interesting detail in connection with the gain in the Roumanian production is contained in the statement of an influx of foreign capital, including American. The Canadian output for 1907 is insignificant as compared with that of the United States, not exceeding 788,872 barrels. This total, however, represented an increase of 229,119 barrels over that of 1906. Dr. Day's report gives considerable attention to the Mexican fields, and the particulars contained therein are of especial interest at this time, since American enterprise and capital are playing a more important part in their development. Comparatively little has been known of the Mexican petroleum resources in previous years, and difficulty is reported in obtaining complete information regarding the yield of 1907 for Dr. Day's report. The production is recorded as 1,000,000 barrels, all fuel oil. This, it is stated, represents a considerable growth of the industry. The fields of the country offer small encouragement for prospectors, as the land is held in enormous tracts, and in order to obtain a working basis for "wildcatting," the operator either has to purchase a big tract of land outright or enter into burdensome leases. There are many other evidences of the exhaustive character of Dr. Day's work throughout his report, and much credit is due to him for his latest valuable contribution on the petroleum industry.

JAPAN AS AN OIL BUYER.

A dispatch from Tokio, Japan, under date of September 17th, says that a big strike of petroleum has been made in that country that promises to make Japan entirely independent of foreign oil supply. This is quite within the bounds of probability, since Japan has been developing oil fields for some years past, and her prospects for opening up gusher territory improve with time. However, we are not ready to believe that American exports of oil to Japan are likely to be entirely shut out by home production. Her demand for petroleum products of all kinds is increasing so rapidly that her production can hardly keep pace with it.

During the fiscal year ended June 30, 1908, the United States exported to Japan 60,540,424 gallons of illuminating oil valued at $5,346,716. If to this we add the crude and lubricating oils and paraffine purchased from the United States by Japan, the total value was upwards of $7,000,000. This, of course, does not include any oil imports by her from other countries, but it is fairly representative of Japan's requirements in petroleum and its products. Incidentally, we may say that Japan's import of oils from the United States during the fiscal year 1908 was an increase from 43,000,000 gallons in 1907 to 60,000,000 gallons, which indicates something of the wonderful awakening of the Flowery Kingdom.

Japan's purchases of American mineral oils are only about 7 per cent in value of our entire oil exports. Even if she entirely ceased to buy, the oil export movement would not be seriously retarded. It has now attained to the enormous proportions of nearly 116,000,000 gallons a month, valued at $8,500,000, or a total valuation of $100,000,000 a year. Nothing can stop this flood of oil from crossing the oceans and sending back to our shores a veritable flood of money; nothing except the failure of our oil wells to produce, and that is a very remote contingency. The increase in exports is largely in illuminating oils, proving that America literally lights the world with her exports of nearly 90,000,000 gallons of kerosene oil every month.

GOVERNMENT WILL USE MORE OIL.

The United States government has authorized the construction of ten submarines at once to be fitted with oil-burning apparatus, and it will not be very long before practically every vessel to be built will be thus equipped.

The Cheyenne, formerly the Wyoming, has been launched and a thorough test will be made on long-distance trips. This monitor has recently been at Mare Island for repairs and oil-burning apparatus installed to take the place of coal. Much interest is being centered upon this test, as it is the desire of the government to use oil as a fuel on all ships, if practicable. Full reports of the efficiency of this fuel will be at hand in due season.

A 4000-acre ranch near Los Alamos, Santa Barbara County, that "Mammy" Pleasant claimed an interest in and which the estate of Thomas Bell of San Francisco sold last May for $500,000, is now worth more than $4,000,000, according to the oil magnates that have secured possession and are developing big oil wells on the property.

W. W. Orcutt, one of the directors and principal owners in the Union Oil Company, which controls the Santa Maria oil fields, and the man for whom the oil town of Orcutt, near Santa Maria, was named, stated in an interview:

"We bought that Bell ranch last May. We paid $500,000 for it. At that time there was a well on the place, but they didn't know what was in it. We have developed that well, and it is giving 500 barrels a day now. We are at work boring four other wells alongside of it, and we expect big results. The ranch had been mortgaged for the past sixteen years for $60,000, and nothing ever paid on the mortgage, and interest was one per cent a month. The bank got practically all the proceeds of the sale.

"Most Californians do not know what a big industry oil really is in this State. The government reports show that last year California was second as an oil producer, with Pennsylvania only in fifth place. And the year before last, until Oklahoma took a sudden spurt, California was in first place. Last year's rating gave Oklahoma first place, California second, Texas third, Ohio fourth, Pennsylvania fifth, and Illinois, I think, sixth.

"But California's wells, now producing about 112,000 barrels a day, have a permanence that the other districts have not shown. California has oil wells that have been producing for more than twenty years, while Louisiana, Texas, and other gulf districts have wells that peter out in a year."

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Methods of Recovering Asphalt from California Crude Oil

By F. H. Dunham.*

For convenience and a better understanding of this article, we might regard California crude oil as composed of three constituent parts: viz., a dry or non-lubricating oil, a lubricating oil, and a set of vulcanized heavy hydro-carbons, i. e., asphalt cement, the last named being held in solution by the non-lubricating oil which terminates at or about 26 degrees Baume, and by the lubricating oils, both acting as solvents.

The recovery of the asphalt cement by the removal of the solvents can be accomplished in either of two ways.

First.—By means of the type of still in common use with a perforated steam pipe extending along the bottom inside the still for the purpose of introducing live steam under the surface of the material contained in the same.

The steam acts as a propelling force to keep the liquid in circulation, also as a carrier, assisting to remove the oil vapors from the still as the steam itself escapes into the vapor pipes.

When steam is used to aid distillation, the solvent oils that hold the asphalt in suspension come away from the still in regular procession as the heat increases up to 600 degrees Fahrenheit, at which point a disturbance takes place in the sulphur content of the asphalt and a breaking up or destructive process begins at the same time in which the lubricating bodies begin to free themselves from what is now liquid asphalt.

Before an asphalt cement is reached, the destructive distillation produces various results: first, a new series of oils are formed which extend from the light to the heavy bodies, being similar in character to the crude oil originally introduced into the still; second, 30 per cent of asphalt cement is destroyed in the making of this new series of the crude material which, as these pass away from the still, carry with them the lubricating bodies.

The loss of this amount of asphalt is a serious matter of itself, but in addition to this loss, insoluble substances are formed which, when detected by analysis, indicate defects in the construction of the asphalt cement. Also from this method of obtaining asphalt cement, we have a product of varying hardness or degrees of penetration and of varying tensile strength, occasioned by the falling back of a portion of the products of the destructive distillation into the body of asphalt contained in the still in which they become enmeshed and being retained as a solvent, injure the asphalt as a paving and roofing material.

The most serious injury to the asphalt cement occurs after it has attained a degree of hardness below 100 penetration Bowen, as the heat of the still at this time has eliminated most of the lubricating bodies and is acting principally on the malthenes and the destructive process is very rapid and seems to continue after the contents of the still have been removed to the cooling kettle, as the writer has found carbines lodged in the steam pipe in the cooling kettle which steam pipe is above the asphalt in the kettle and used for the purpose of preventing spontaneous combustion. Have also found a larger quantity in samples taken from the cooling kettle than would show in the sample taken from the still.

Another result of the destructive distillation is the diminution of Petrolene in a slightly larger proportion than what the insolubles or carbines appear, as a portion of the carbines escape with the vapor and are found in the residuum oils. We therefore find that this method is wasteful and does not fully accomplish the purpose desired, i. e., the production of an asphalt suitable for street paving purposes and above adverse criticism as to quality. With slight modifications, the method above described has been in use for upwards of twenty years.

Second.—A more recent method has been devised by which the ordinary still may be used with specially constructed apparatus outside the still, in which the liquid asphalt is circulated and the solvent oils extracted from the asphalt, discarding the use of the perforated steam pipe as a means of maintaining the circulation of the liquid and using a propeller pump instead, and at the same time maintaining a temperature below that at which the malthenes are unfavorably affected.

By this method, the oils are removed in their successive series without detriment to the oils or the asphalt cement. As contrasted with the steam process, the lubricating oils continue to drop in gravity, running as low as 13 degrees Baume, and remaining translucent during the entire process.

The lubricating oils remain sweet, while on the other hand, when steam is used and the average product is about 24 degrees gravity and stands in value only as the equivalent of crude oil and must be re-run to obtain from it the lubricating oils.

The percentage of loss by dissipation of the volatile oils by the use of steam is approximately five per cent more than when steam is not used.

The asphalt by the dry process is made definitely at whatever penetration point is desired, and is only very slightly affected by heating, samples tested showing a loss, approximately, of only twenty-four one-hundredths of 1 per cent after heating four hours at 300 degrees temperature.

The gain in quantity of this method over the old one is in the ratio of 60 to 37; i. e., an oil yielding 37 per cent of asphalt by the steam process yields 60 per cent by the dry method, with cement of like penetration and an oil giving 16 per cent by the old method gives 25 per cent by the new one.

In conclusion, would say that the product of the dry method is an increased quantity of asphalt that can be depended upon as uniform in its component parts, of high tensile strength, that would suffer least of any by evaporation and be free from carbines, and removed from the objections urged against the petroleum asphalt for paving and roofing purposes; and the cost of production is lowered from two to three dollars per ton, varying with refinery equipment and amount of crude consumed.

*Superintendent Barber Asphalt Co., Los Angeles.

OIL DIVIDENDS FOR THREE MONTHS ENDING OCTOBER 7th.

During the first six months of 1908 the dividend-paying companies listed on the San Francisco Oil Exchange distributed $1,269,192.15. From July 9th to October 7th inclusive, the amount paid was $2,780,213.50, or $4,049,405.65 for the nine months up to and including October 7th. The rate of dividends during the last quarter was approximately $200,000 per month, while the distribution for the past three months was at the rate of over $900,000 per month. The rate of dividends for this period was $30,000 a day.

The following companies paid dividends during the last three months:

Company	No. of Div.	Last Dividend	Amount per share	Amount of Dividend	Total Paid to date
Alma	12	Sept. 22, '08	.03	$11,400.00	$ 136,800.00
Amalgamated Oil	14	Sept. 10, '08	1.00	50,000.00	700,000.00
Brookshire	29	Oct. 1, '08	.02	10,000.00	270,000.00
Caribou	41	Sept. 15, '08	.25	20,175.75	337,368.24
Claremont	40	Sept. 15, '08	.01	4,500.00	188,000.00
Coalinga Pacific	5	Sept. 21, '08	.10	6,500.00	27,950.00
Columbia	..	Sept. 25, '08	.01	9,992.66	134,900.32
Esperanza	11	Sept. 29, '08	.01	1,600.00	17,450.00
Four	58	Sept. 25, '08	'01	3,000.00	183,000.00
Homestake	36	July 30, '08	.10	1,000.00	68,250.00
Illinois Crude	20	Oct. 1, '08	.01	2,000.00	46,000.00
Imperial	62	Oct. 6, '08	.60	60,000.00	1,640,000.00
Kern River	35	Oct. 3, '08	.10	2,000.00	90,000.00
Linda Vista	8	Oct. 7, '08	.01	3,838.50	26,869.50
Lucile	1	Sept. 15, '08	.10	2,670.40	2,670.40
Peerless	65	Sept. 20, '08	.06	6,000.00	729,000.00
Pinal	..	Oct. 5, '08	.15	22,500.00	372,341.00
S. F. & McKittrick	5	Oct. 1, '08	.30	15,000.00	60,000.00
Sauer Dough	31	Sept. 1, '08	.05	9,975.00	309,225.00
Sovereign	12	Sept. 30, '08	.01	5,000.00	65,000.00
Sterling	15	Sept. 15, '08	.10	25,000.00	247,000.00
Superior	5	Sept. 5, '08	.01	5,000.00	25,000.00
Union	146	Sept. 20, '08	1.25	98,092.50	4,185,539.15
United Petroleum	85	Sept. 20, '08	2.30	33,768.60	1,452,200.93
Wabash	8	July 24, '08	.02	6,000.00	48,000.00
West Shore	43	Sept. 15, '08	.05	5,000.00	215,000.00

Total dividends paid to date by these and thirteen other companies $16,561,052.23

MEXICAN PETROLEUM NEWS.

Information about the oil fields of Mexico reaches the United States in meagre installments, but as the detached fragments are assembled they indicate enormous deposits of crude petroleum along the eastern coast region covering several hundreds of miles, and English capital is becoming heavily interested in the development. The Waters-Pierce people for years have maintained a refining plant at Vera Cruz, the chief seaport on the Gulf side of Mexico, and an auxiliary plant at Tampico, the crude being shipped from the United States to avoid the heavy duty on manufactured products. Until recently kerosene sold at sixty cents a gallon and is now selling at from forty to fifty cents, the entry of the Pearsons into the Mexican market causing a lowering of prices.

The Big Gusher.

Soon after the flames were extinguished in the great gusher sixty miles southwest of Tampico the oil began flowing, and according to measurements, it is now flowing 128,000 barrels of fluid every twenty-four hours, a considerable part of which is said to be salt water. The great crater formed by the fire was measured. This crater remains full of oil and the overflow is gauged as it runs into ground reservoirs made to retain it. The gravity of the crude is 15 degrees Baume, and its density makes it necessary to employ agitation for convenient handling for fuel purposes. After the air touches it its liquidity decreases to a degree that makes it difficult to force through ordinary pipes for burning, like some of the heavy California asphalt.

English Concern Enters the Field.

Pearson & Sons, a well known English contracting firm, have made extensive investments in lands, railroads, refineries and other agencies for the development of petroleum in Mexico, the total sum thus expended being, at least, $2,000,000. The base of their operations is Minatitlan, (pronounced Min-a-ty-lan, with the principal accent on the last syllable), where twenty-two 1,000-barrel stills are completed, four of them being in regular use and connections being made to the others as fast as possible. A large number of 45,000-barrel iron tanks are up and many products tanks, and a very complete plant is in process of installation. Minatitlan is situated on a river twenty miles from the Gulf of Mexico, the stream having been dredged to permit the entry of boats to transport material. A railroad, twelve miles long, has also been constructed to San Christobal, to the southwest, where the oil wells are located. Distributing stations for refined oils are being put in at principal towns, although most of the products of the refinery, particularly motor naphthas, are shipped to England.

The San Christobal crude is credited with a gravity of 27 degrees Baume, and with giving off thirty-five per cent of burning oil and ten per cent naphtha. The Pearsons have fifteen wells shut in besides those producing the oil used, and are drilling others. Several of these wells had an initial production of 1,200 barrels at a depth of about 1,200 feet. People operating about 250 miles north of San Christobal, in southwestern Chihuahua, near the mountains, are reported as agreeing to contract with the Pearsons to furnish 2,000 barrels a day of a fine paraffine crude. W. R. Hearst and associates are prospecting extensive holdings there.

Hugh King, Lewis Emery, C. W. Rathbone, Mr. Linneman and associates, who organized the Pennsylvania Petroleum Company to operate in Mexico, after securing leases on an extensive area and drilling two wells, one 500-barrel, one 2,500 barrels, it is understood, transferred fifty-one per cent of the holdings to the Pearsons.

TAMPICO.

American oil operators from Indiana, Pennsylvania, Illinois, Kansas, Oklahoma and Texas are pouring into the Tampico region and vast tracts of prospective oil lands are being leased by them and preparations made for developing the properties. It is estimated that not less than 50,000,000 acres of oil lands in the States of Tamaulipas and Vera Cruz have been leased by these Americans during the past few weeks. The phenomenal oil well and fire in the San Geronimo field, seventy-five miles southwest of here, served to awaken widespread interest in Mexico as a country of immense possibilities in oil production.

H. C. Mount, of Indiana, who is said to be a large oil operator in that State, has established headquarters in Tampico and is among the Americans who are preparing to engage in oil development work in Mexico on a big scale. Mr. Mount has made a thorough investigation of the situation in the Tampico region. He says that he is confident that the largest and most wonderful oil field in the world will be developed in the territory adjacent to the Gulf of Mexico in the Tampico region, and that within two years from now Mexico will be producing more oil than all of the old fields of the United States combined. The oil in the fields adjacent to Tampico is very heavy, being about 14 to 15 degrees Beaume. It is possible to bore wells of large size and to obtain enormous flows of oil, he says.

The most difficult feature of the oil business in Mexico is the fact that the land is all held in tracts of great size, some of the estates containing 2,000,000 to 3,000,000 acres. It is almost impossible to find a tract as small as 100,000 acres. The Mexican owners of these lands are beginning to realize that they may have something valuable and lease prices are going up all the time. The Pennsylvania Oil Company leased several hundred thousand acres of land upon which the gusher which burned so long is situated at the low price of $300 Mexican money per annum. That was equal to $150 gold a year. The lease is considered worth many millions of dollars.

LACQUERS AND PAINTS FROM PETROLEUM WASTE.

The waste residues produced during the refining and distillation of petroleum are partly acid, partly alkaline in character according to the method of production, and yield, on recovery of the acid or alkali, tarry masses suitable for a variety of purposes.

According to Zalozjecki, the idea of preparing lacquers and paints from these residues is not new, but was foreshadowed in an American patent dated 1863. The former has, however, elaborated a novel method of utilizing the acid residue for the same purpose. The sludge acid is thinned down with water, which causes a precipitation of tarry matter, these being then drawn off from the acid liquor and heated to boiling in suitable pans, with an equal volume of water, and neutralized with basic oxides, carbonates, or organic bases. The corresponding salts thus formed constitute, with the rest of the components present, a reddish brown homogeneous mass, which, for conversion into lacquers, may be entirely freed from moisture, and dissolved in a mixture of strong alcohol or benzine, turpentine oil, or tar oil, in the cold, only a small insoluble residue being left. Another method is to effect solution direct in an equal volume of fifty per cent alcohol and benzine, oil of turpentine, or tar oil, also in the cold, two layers—one an alcoholic and the other a hydrocarbon solution—being formed in this case.

These lacquers belong to the family of the mixed resin metallic-soap lacquers. A mixed lacquer is obtained by the first described method, and a soap lacquer is contained in the hydrocarbon solution in the second process. The petroleum acids and sulpho-acids form, when neutralized, metallic salts, which contribute to the drying and hardening of the lacquer, and consequently these mixed lacquers are characterized by more rapid drying than the others. The resin lacquers dry in three to seven days, but can be accelerated by driving off the volatile matters in the crude lacquer before solution.

The metallic soap lacquer dries in twelve hours. All these new products, which stand air and light well, but are susceptible to the action of the water, can be used on wood, metal and leather and form a good stain under dark polish. By an addition of five to ten per cent of linseed oil varnish the mixed and resin lacquers can be rendered elastic.

Fresh sludge acid is the most suitable for making these products, owing to the predominance of polymerized bodies (petroleum resins) over sulpho-acids, the former being the true lacquer substance, whereas the others merely act as driers. After prolonged standing a larger proportion of sulpho-acids becomes formed, and their separation becomes difficult, besides entailing an increased amount of alcohol in the solvent. The sulpho-acids can, as a matter of fact, be entirely dispensed with, the petroleum acids—which are essential—having sufficient drying power.

Superior lacquers are obtained from the waste acid from the refining of mineral lubricating oils, from two-thirds to three-quarters of the acid tar consisting of lacquer substance and yielding two or two and a half times its weight of the finished article.

SAVE THE OIL TANKS.

The wholesale destruction of oil tanks by lightning this summer, which resulted in the loss of several million dollars' worth of property throughout the United States, has resulted in a Pittsburg man patenting an idea the execution of which, it is claimed, will prevent buildings such as oil tanks and others which are exposed from being struck by lightning. Instead of erecting lightning rods, as has been done in the past, to attract lightning, it is now proposed to do away with the cause which leads the lightning toward the building.

Robert C. Totten, a pioneer steel manufacturer of Pittsburg, and one of the early partners of Andrew Carnegie, is the father of the new idea. Already oil operators are experimenting with it. Mr. Totten claims that most structures which are struck by lightning are those which are exposed, it being seldom that one of a group of buildings is struck by lightning. On sultry days, when there is no breeze, a column of rarified air is formed over these exposed buildings. In case of an oil tank, this column of air is rarified to an even greater degree by the gases which arise from the oil in the tank. When a storm sweeps over one of these exposed buildings, the lightning is attracted by this rarified column, follows it down and strikes the structure.

It is now proposed to destroy this column of rarified air and keep it on an equilibrium with the surrounding atmosphere. Electric fans, placed on top of these exposed buildings, will disperse this column of rarified air and do away with the "path of least resistance," which attracts the lightning. The system is so simple and inexpensive that great things are expected of it.

Exports and Shipments of Mineral Oil in May, 1908

CUSTOMS DISTRICTS	CRUDE OIL		NAPHTHAS, ETC.		ILLUMINATING		LUBRICATING, ETC.		RESIDUUM	
Pacific Exports from										
Alaska	.....	.....	200	62	10	3	.....	.....	.....	.....
Los Angeles	2,511,789	59,804	.....	.....	.....	.....	.....	.....	.....	.....
Puget Sound	630,398	12,035	9,425	1,709	4,440	578	6,474	876	3,622	366
San Diego	.....	.....	.....	.....	400	71	40	21	526	53
San Francisco	3,360,000	48,000	7,210	767	5,480,963	248,834	16,520	4,125	.....	.....
Total	6,502,187	119,839	16,835	2,538	5,485,813	249,486	23,034	5,022	4,148	419
Shipments to Hawaii										
From Los Angeles	735,000	14,000	21,600	2,916	.....	.....	.....	.....	.....	.....
San Francisco	2,079,000	34,650	50,918	6,885	115,260	17,597	33,130	13,484	.....	.....
Shipments to Alaska										
From Puget Sound	11,200	314	50,834	7,797	9,940	1,556	832	263	.....	.....
San Francisco	.....	.....	180,540	31,622	69,240	11,134	3,436	1,427	.....	.....
Eastern Exports from										
Baltimore	.....	.....	6,380	1,214	1,175,204	70,554	349,550	52,226	1,060,146	42,406
Boston and Charlestown	100,000	2,500	10,772	1,473	8,010	856	10,275	2,142	225,000	6,187
New York	2,736,306	166,939	2,038,594	239,851	64,665,423	5,150,426	6,396,648	872,189	32,000	2,262
Philadelphia	301,978	19,878	1,583,981	118,445	26,502,090	1,684,895	4,004,980	375,387	6,466,995	242,115
Galveston	.....	.....	.....	.....	.....	.....	1,722	344	.....	.....
Sabine (a)	2,462,058	78,654	.....	.....	1,693,230	84,660	.....	.....	3,215,718	112,550
Total	5,600,342	267,971	3,639,727	360,983	94,043,957	6,991,391	10,763,175	1,302,288	10,999,859	405,520

Exports of Domestic Mineral Oil During June, 1908

CUSTOMS DISTRICTS	MINERAL OIL CRUDE		MINERAL, REFINED OR MANUFACTURED							
			NAPHTHAS		ILLUMINATING		LUBRICATING		RESIDUUM	
	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Pacific Coast Exports										
Alaska	.....	.....	510	161	.....	.....	2,359	478	.....	.....
Puget Sound	1,090	58	23,787	2,119	500	65	5,093	904	2,439	219
San Diego	.....	.....	.....	.....	875	164	40	12	2,441	269
San Francisco	.....	.....	7,204	1,589	9,737,894	494,398	60,987	19,058	.....	.....
Total	1,090	58	31,501	3,869	9,739,269	494,627	68,479	20,452	4,880	488
Shipments to Alaska										
From Puget Sound	18,700	519	73,288	9,674	20,178	3,394	9,906	3,185	.....	.....
San Francisco	1,596,000	22,800	73,500	12,250	1,980	321	950	218	.....	.....
Shipments to Hawaii										
From Los Angeles	756,000	10,800	19,250	3,062	.....	.....	.....	.....	.....	.....
San Francisco	3,245,000	61,050	65,390	8,751	9,500	1,566	5,300	1,724	.....	.....
Eastern Exports from										
Baltimore	.....	.....	.....	.....	1,261,088	75,692	252,550	36,519	.....	.....
Boston and Charlestown	.....	.....	5,900	846	1,133	126	22,413	3,615	.....	.....
New York	.....	.....	2,328,998	271,583	62,778,339	4,772,689	7,282,333	968,347	14,964	1,300
Philadelphia	1,401,268	122,097	30,651	3,343	32,036,191	1,926,064	1,496,664	201,458	1,146,536	42,935
Galveston	4,914	218	.....	.....	50,106	5,375	50,862	7,463	.....	.....
Sabine (a)	.....	.....	.....	.....	5,335,093	248,782	.....	.....	727,003	25,445
Total	1,406,182	122,315	2,365,549	275,772	101,461,950	7,028,728	9,104,822	1,217,402	1,888,503	69,680

Exports of Domestic Mineral Oil During July, 1908

Pacific Exports from										
Alaska	.....	.....	900	277	1,000	170	44	34	.....	.....
Los Angeles	2,100,000	50,000	.....	.....	.....	.....	.....	.....	.....	.....
Puget Sound	472,700	9,758	2,230	432	1,020	87	10,778	806	.....	.....
San Diego	.....	.....	.....	.....	.....	.....	395	99	1,670	183
San Francisco	.....	.....	416	60	5,957,674	269,376	24,005	6,098	.....	.....
Total	2,572,700	59,758	3,546	769	5,959,694	269,633	35,222	7,037	1,670	183
Shipments to Alaska										
From Puget Sound	2,000	164	55,207	9,833	10,838	2,265	5,444	2,618	.....	.....
San Francisco	.....	.....	13,458	3,214	43,729	6,783	.....	.....	.....	.....
Shipments to Hawaii										
From Los Angeles	735,000	14,000	21,600	2,916	.....	.....	.....	.....	.....	.....
San Francisco	7,896,000	111,700	21,947	3,103	24,605	4,084	9,436	3,627	.....	.....
Eastern Exports from										
Baltimore	.....	.....	.....	.....	1,249,968	57,362	260,350	42,742	3,273,161	130,926
Boston and Charlestown	.....	.....	5,454	728	852	95	15,053	2,843	.....	.....
New York	7,877,820	494,628	2,375,934	274,931	62,241,749	4,857,813	7,135,505	974,903	2,000	200
Philadelphia	1,070,094	64,849	2,589,314	173,895	31,295,357	1,862,428	1,539,227	192,924	2,350,337	83,064
Galveston	19,824	805	.....	.....	.....	.....	22,596	6,055	.....	.....
Sabine (a)	3,047,977	90,037	.....	.....	1,960,374	102,420	3,750	630	6,605,914	228,238
Total	12,015,715	650,319	4,970,702	449,554	96,748,300	6,880,118	8,976,481	1,220,097	12,231,412	442,428

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OCTOBER, 1908

PROSPECTS OF OIL SHORTAGE.

The shortage of oil is expected soon to reach the acute stage, especially in the Eastern States, as both foreign and domestic demand is on the increase, while the production is going the other way. The shortage in the States that produce the high-grade will approximate 30,000,000 barrels this year, made up by the low grade of various mid-continent sections.

Such conditions show no promise of becoming alleviated, and, as in all other products, when the demand becomes considerably greater than the supply, the price is bound to rise. In the East producers do not, as a rule, tie themselves up to long-time and exclusive contracts, but sell their oil from day to day at market prices. In California it is the custom to contract for one, two or three years ahead, and today the bulk of the production is contracted for until 1910.

The price ranges from 50 cents to 65 cents per barrel, and, although this price is much greater than was obtainable a year or so ago, it is entirely probable that oil will be selling on a basis whereby $1 per barrel would be no more than a fair price and permit a nice profit to the marketing companies. The situation as regards refining oil is much more acute than with the heavy production, and hence the efforts on the part of the Standard, especially, to tie up all possible production, while the price can be made around present figures.

Judging the situation from an impartial standpoint it would seem that California producers have not exercised the best of judgment in making long-time contracts. The new producers that come in during the next year or two will profit largely by the advance, while the old producers, although making a nice profit at present prices, will see the great big profits go to the Standard.

This condition evidently has been brought about by strategy to some extent and lack of appreciation by producers of the situation, because of the fact that oil was a drug on the market less than two years ago, and they were ready to grasp any apportunity to dispose of their oil at a profit and be assured of a continuous market. Times have changed since "Hannah died." Time was when everything was shut down. No market. Now there is an enormous and unsatiated demand.

One method by which producers were made to believe that white was black was through statistics. Ready made statistics are easy of accomplishment. If you want to make it appear that there is an over-production make big-sounding statistics, no matter if production is decreasing, statistics must show an increase. It would be idle to dispute government statistics, hut the question has arisen whether or not the government's figures are correct or even approximately correct. Independent, unbiased, unprejudiced, private investigations of the production made from personal knowledge of conditions seriously challenge official figures and place it at several millions of barrels less than the government's estimate for last year Owing to peculiar conditions but little new work was done last year, and practically no new production was added, and at the same time the same conditions caused many large producers to close down completely. And yet the government figures show a considerable increase in the output. Where did the government get its statistics?

It certainly could not have been from independent calculation, and, therefore, must have been from sources that had some interest in making the figures very large. The government is prosecuting the Standard Oil Company, and yet it does not seem to hesitate to take its figures from authorities that are directly interested in showing a big production.

If producers have not enough self-interest to look into the question and protect themselves from having the wool pulled over their eyes they are entitled to be dubbed the lambs of California just the same as if they entered the shambles of Wall Street for the shearing.

The Standard Oil Company recently voluntarily cancelled a 30-cent contract with Midway producers and contracted for double the amount of oil at 50 cents, still about 15 cents under what is being paid on other contracts. But, of course, this was a concession on the part of the Standard, because the Standard wants oil and must have it even if it has to pay what it is worth.

As a matter of self protection producers should take a little pains to investigate for themselves and not be deceived with their eyes open by any made-to-order figures.

However, all this will stimulate new production, and the new producers will undoubtedly conceive some plan whereby they will benefit financially by the increased demand for their product, and not let it all go to the middleman under contract.

It is not a far-cry to dollar oil.

WILD-CATTERS.

Wild-catting in oil is a desirable feature of the business. It occupies the same relative position to the oil industry as the prospector does in the mining field. The more wild-catting the larger becomes the territory in which the drilling is done. The necessary elements for successful wild-catting are surface indications, formation, money and nerve.

No one will attempt to drill a well unless the first two elements are present, and oftentimes indications are such as to warrant the almost certain expectation that oil in paying quantities will be discovered. The wild-catter is the pioneer in the oil field. He is the pioneer in extensions of proved territory, and almost every day reports come that some new well is brought in in hitherto untouched territory, thus extending the proven zone of producing territory and enabling operators to work in the intervening ground with nearly positive assurance of success.

REFINERY PROFITS.

Profit in any business depends upon the wisdom in which it was founded and with which it is subsequently managed.

With ordinary business sagacity the refining of oil should show a percentage of profit far greater than it is possible to realize in most enterprises. This, too, with an almost absolute security of capital. Generally, large profits are associated with insecurity of capital. But in a properly-managed refining company, the security is almost perfect, as will appear from the following considerations: The capital invested is divided into two main parts—that invested in a plant, and that used as operating capital. The money invested in a plant can only become lost (1) if the plant is destroyed; (2) if the plant is so located that it becomes unprofitable (through inability to secure oil, prohibitive freight rates, etc.) to operate it. The nature of a refining plant is such that its destruction is next to impossible—fire, water, wind, lightning, etc., are unable to do much damage, since all the essential parts are built of steel. Only time and rust will destroy such a factory. Loss through the second factor named should be very remote, for certainly those factors would be considered before building a refinery. Loss of money set aside for operating capital could occur only by repeated destruction of the stock on hand, a possibility so remote that it need not alarm the most timid; or by absolute incompetence on the part of the maangement.

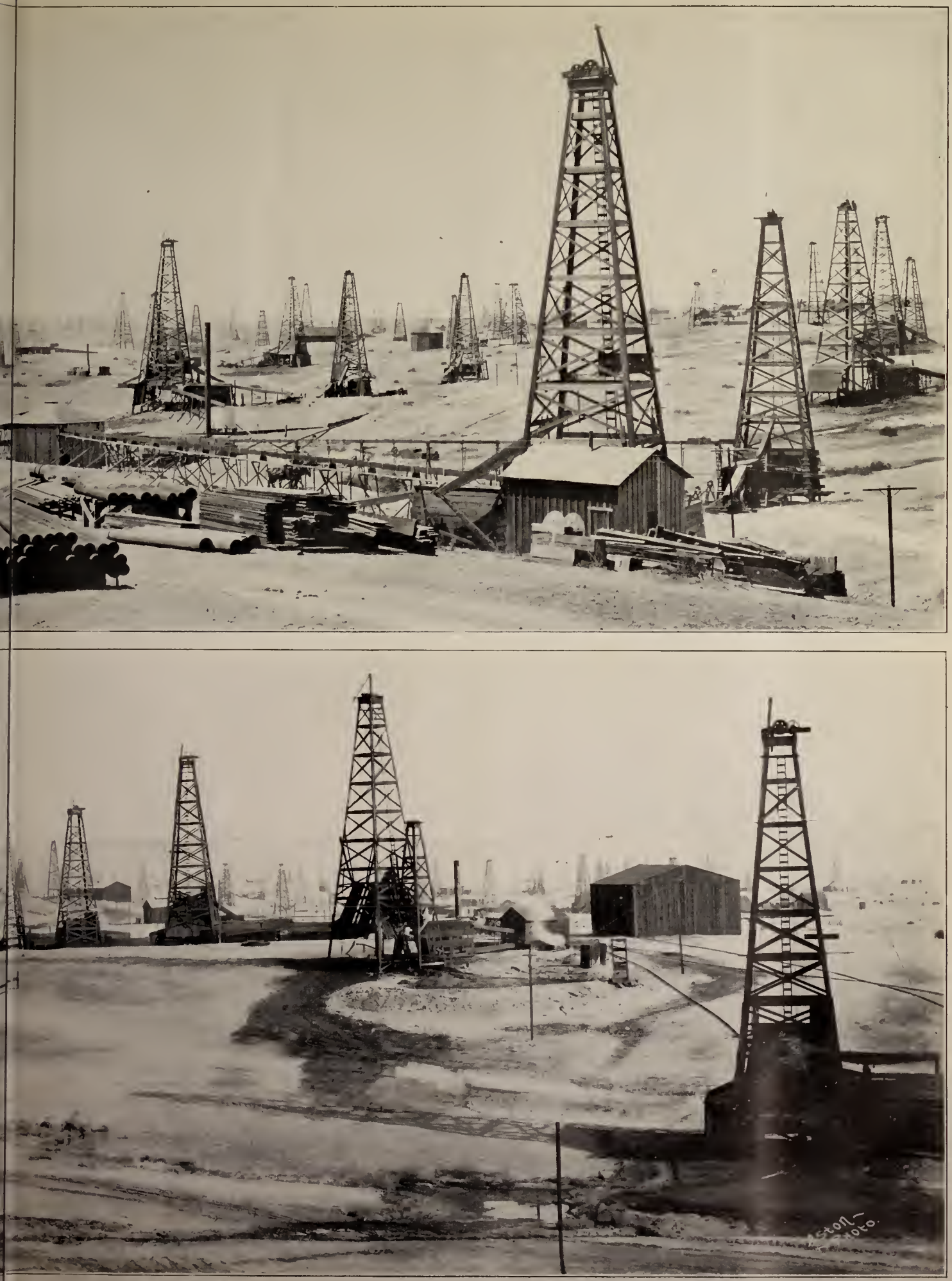
Security of investment, as well as magnitude of profits, will depend upon the following five elements:

1. An absolutely assured continuous supply of crude oil for a term of years.
2. A properly-built refinery, properly located.
3. The ability to produce high-grade products.
4. A guaranteed acid supply.
5. Adequate marketing facilities.

An assured oil supply can be secured by contracting with the producers, delivery to be made by pipe-line or steamer. Railroad transportation cannot be depended upon, even if the contracting parties have their own tank cars. This problem is intimately con-

Supplement California Derrick, October 1908.

Typical Scenes in the fa



us Kern River Oil Fields of California.

nected with the location of the refinery, inasmuch as the plant should be so situated that it will not be dependent solely upon one field for its supply. By owning its own wells a company would, of course, be assured of its supply of crude oil as long as its field held out. But to provide for such a contingency the wells should be located in different fields.

The site upon which a refinery is to be built should be selected with the greatest care; a point to which little attention is seldom given. Here a little extra initial expense will often bring a big return. The fallacy of locating in the oil fields has been repeatedly demonstrated, both in this country and in Russia. A location should be secured near a great shipping center, in order to secure the advantages of safe and efficient harbor facilities, more frequent service, better rates, and prompt delivery of machinery, supplies and repairs. The advantage of being able to secure extra employees at short notice is not to be disregarded.

The production of high-grade oils is now assured in practically all parts of the world. In California, Starke's patented process (controlled by the Standard Oil Co.) has hitherto afforded the only means of preparing first-class kerosene from our crude oils. In Roumania the refiners are using Starke's method, or some modification thereof, according to the reports in the oil journals. But other processes have now become available, by means of which kerosene equal to that offered for sale in any makret of the world can be produced. There are, however, some crude oils from which it has never been found profitable to prepare good kerosene or lubricating oils.

Sulphuric acid is not always manufactured in the proximity of a refinery. Moreover the nature of this acid is such that it is not profitable to keep a large supply in storage. For this reason, acid factories regulate their output to meet the immediate demand. Either a sure and adequate supply should be contracted for, or an acid factory erected in connection with the refinery. In a large works the latter is by far the better plan.

The importance of this factor becomes apparent, when one considers that from forty to eighty pounds of acid are used per barrel of kerosene produced. Thus a refinery manufacturing only one thousand barrels of kerosene a day would daily consume twenty-five tons of acid, assuming fifty pounds of acid were used per barrel of kerosene refined.

Adequate marketing facilities include: cans and cases, drums, tank cars, or steamers if necessitated by the size of the refinery, storage tanks located at central distribution points, etc. But, above all, a trained, efficient, sales force, ably directed, is the one indispensable factor in disposing of the refined products.

Will any man deny that these conditions are impossible to control? Will not ordinary business sagacity, applied to the oil business, bring success in this as surely as in any other commercial enterprise? It need hardly be remarked that an intimate knowledge of the process of refining should be possessed by the general manager of an oil company.

The appended refinery tests of several different oils, with the estimated profits, will afford a basis for estimating, in a measure, the relative value of different crude oils.

26.5″ Baume Coalinga Oil.

7%	Gasoline of 66″ Be′, at .15 per gal.	$ .441
3%	Benzine of 58″ Be′, at .10 per gal.	.126
4%	Engine Dist. of 52″ Be′, at .08 per gal.	.134
25%	Kerosene of 41″ Be′ (less .15% loss), at .09 per gal.	.801
59%	Fuel Oil of 16″ Be′, at .90 per bbl.	.531
2%	Loss in distillation	
	Selling Price, per bbl.	$2.033
	Cost of Crude Oil, per bbl.	$1.00
	Cost of Refining, per bbl. (estimated)	.40
	Cost of Marketing, per bbl. (estimated)	.10
	Total	$1.50
	Net Profit per bbl.	$ .50

23.1″ Baume Coalinga Oil.

3.5%	Naphtha of 57″ Be′, at .12 per gal.	$ .1764
30.7%	Kerosene of 40.5″ Be′ (less 20% loss), at .09 per gal.	.9450
63.8%	Fuel Oil of 16.6″ Be′, at .90 per bbl.	.5742
2. %	Loss in distillation	
	Selling Price, per bbl.	$1.6956
	Cost per bbl.	$1.50
	Net Profit ber bbl.	$ .1956

24″ Baume Santa Maria Oil.

16%	Naphtha of 57″ Be′, at .12 per gal.	$ .8064
17%	Kerosene of 42″ Be′ (less 15% loss), at .09 per gal.	.5463
65%	Fuel Oil of 18″ Be′, at .90 per bbl.	.5850
2%	Loss in distillation	
	Selling Price per bbl.	$1.8912
	Cost per bbl.	1.50
	Net Profit per bbl.	$ .3912

25.8″ Baume Santa Maria Oil.

17.5%	Naphtha of 56″ Be′, at .12 per gal.	$ .8820
21.0%	Kerosene of 41″ Be′ (less 15% loss), at .09 per gal.	.6750
59.5%	Fuel Oil of 17″ Be′, at .90 per bbl.	.5355
2. %	Loss in distillation	
		$2.0925
	Cost per bbl.	1.50
	Net Profit per bbl.	$ .5925

Note.—The loss of kerosene noted in each case occurs in purifying the crude coal oil distillate with acid.

Analyses of these figures show that the greatest profit is made on the gasoline and benzine, so that the larger the percentage of these products contained in a crude oil, the more profitable it is. One should not too hastily conclude that an oil of high specific gravity will not be profitable to refine. While this is generally true, there are many exceptions. A Mexican oil of .980 sp. gr. yielded over four per cent of 58-degree benzine. It would therefore have been highly profitable to refine, for the cost of producing benzine is very small compared with the cost of producing coal oil—the main constituent of most oils.

Again, there are some light oils that are much less profitable to refine than one would expect. The author has seen oils of about .870 sp. gr. which yield practically no gasoline or benzine, but a large amount of what should be kerosene. But all attempts to purify the kerosene so that it would burn satisfactorily were futile, and the product was sold as inferior engine distillate or stove oil.

PETROLEUM PRODUCTION BY COUNTIES.

Compiled by Lewis E. Aubury, State Mineralogist.

The production of petroleum in California for the year 1907, according to the statement just issued by Lewis E. Aubury, State Mineralogist, is distributed by counties, as follows:

Fresno	9,050,300	$ 3,620,120
Kern	15,700,308	4,673,867
Los Angeles	4,318,739	2,633,541
Orange	2,426,750	1,456,050
San Luis Obispo	48,127	16,845
Santa Barbara	8,392,623	4,166,661
Santa Clara	22,100	5,525
Ventura	352,224	211,334
Total	40,311,171	$16,783,943
Natural gas, bituminous rock and asphalt		$ 1,245,994
Total value hydrocarbons and gases		$18,029,937

Charles F. Humphrey, one of California's foremost corporation attorneys, returned to San Francisco on the 13th instant, after several months' absence in London, England, during which period of time he has consummated a deal of no small magnitude in the annals of the oil industry of this State. Accompanying Mr. Humphrey was Sir Thomas A. Salt, who comes here for the purpose of examining the properties of the new corporation (British Consolidated Oil Corporation, Ltd.), and who will report to the English corporation the status of the properties upon his return.

The British Consolidated Oil Corporation, Ltd., has evidently been organized along sound and permanent lines. It includes several exceptionally good properties in the Coalinga oil district, already has a large production and income, and should be immediately recognized as one of the foremost companies of the State.

Mr. Arthur W. Eastlake, M. Inst. M. E., engineer of the company, is now on the properties formulating the plan for future development under the direction of Sir Boverton Redwood, technical advisor to the corporation.

Mr. Humphrey is entitled to a great deal of credit in bringing about this conservative, legitimate consolidation of the excellent properties represented in the combination. The main office of the corporation in California has been established at Coalinga.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

The building spirit is on in this city. In all directions the carpenter is making glad music with hammer and saw. The business section has caught the air. A. E. Webb, a young pioneer, has cleared the ground on his Fifth Street property and will build a one-story brick, seventy feet front on Fifth, by eighty feet deep; the walls will be heavy so that an additional story may be built at any time when business will warrant. There will be three store rooms, well lighted, modern finish in counters and suitable for the present style of fixtures to accommodate the trade. One of the stores will be 25x80, with a basement full size, in which Mr. Webb will display on the two floors a complete stock of house furnishings fully up to date. Thus the rough edges are wearing off. The town is growing.

Z. L. Phelps and Jake Swanz, owners, will remodel the opera house and make it more modern, complying with the growth of our city. The present building is to be moved back and a forty-foot addition built, containing two store rooms, and there will be a suitable entrance to the main auditorium. The main hall will be twenty feet longer; a gallery across the rear end will contain the choice seats. The enterprise of the gentlemen is in keeping with the spirit of the town.

The American Petroleum Company will soon have two strings of tools running on section 18-20-15; two strings on section 6-20-15, and two on section 30-20-15. The water is shut off in well No. 6, section 30, at 1850 feet, and the oil sands have been entered at about 2,000 feet. In well No. 1 water was shut off at 1550 feet, and they are near the oil sand now. The management has made record time on these wells.

Walter M. Dunham made a trip to Mono Lake country a week ago, where he made a thorough examination of the oil sands, the seepages and outcroppings. His trip was taken in the interest of the Mammoth Oil Company, who will operate in that locality. Mr. Dunham is well qualified for this work, having spent years in study of formations and their value to the oil industry.

The Presbyterian Church Association will erect a church building in the Sunset Addition, northwest of the business portion of town. The funds for that purpose have been pledged. Coalinga will have the third church building added to her credit. The ball game, Fat vs. Lean, contributed $302.00 to this cause.

The Imperial Oil Company (Coalinga Division), section 2-19-15, will start several more strings of tools. It is now running four strings. The company will try out a rotary drilling rig on this section to demonstrate whether the rotary is suitable to this formation. Superintendent Fennaman has resigned, and A. S. Roach, of Arroya Grande, Texas, has been appointed to fill the vacancy.

At a meeting of the Board of Trustees Monday evening the matter of cement sidewalks was discussed. Attorney Richmond was instructed to draft an ordinance under the Vrooman Act, for the construction of sidewalks on both sides of Fifth Street, from the Catholic Church to the south city limits, and on both sides of E Street, from the Associated property to the east city limits.

Through the energetic action of Walter M. Dunham, a banner has been stretched across the street at the corner of Fifth and Front Streets, plainly seen by the incoming passengers on the railroad as they come into town, which reads, "Coalinga Crude Oil Awarded Highest Cash Prize. Coalinga Refined Oil Awarded Gold Medal—Highest Award. Sacramento State Fair, 1908."

The steel beams and iron posts in the front of the A. P. May, Inc., building on Front Street, with the heavy brick walls going up, makes a very imposing structure, and marks the advance of the city with the confidence of business men in the future of the town.

Work on the Pleasant Valley hotel company building on the corner of Fifth and D Streets, is progressing rapidly. Workmen are putting in place the concrete walls for the basement. The management will push the work so that the building may be ready for guests by January 1st.

The Peoples' Associated Oil Company, section 32-21-15, makes its bow to the oil industry, has material on the ground for rig, which will be built at once, and active development work begun. "Jerry" Motherall and E. W. Preston, of Hanford, are promoting the company and have acquired forty acres of land.

A. P. May, Sam Oldham, Chas. Fredenburg and others, formed an "Association" and held a meeting a few days ago, elected officers and provided means for developing their claim on section 8-21-18. A survey has been had and other work will soon be started.

Manager S. R. Bowen is busy about the Oil Well Supply Company's machine shop, erecting a building that will protect the plant from winter rains as well as from the dust of summer.

Arthur W. Eastlake, M. Inst., M. E., of London, England, is a guest at the California Oilfields, Limited, camp, on section 27-19-15. Mr. Eastlake is in America in the interests of the British Consolidated Oil Corporation, Limited, which has acquired extensive holdings in this field.

There is a rumor that the Puente Oil Company, composed of local men, is getting material on section 19-25-19. We are informed that three-quarters of this section is patented land.

The Porter & Scribner lease, section 7-20-15, has a 1400-foot hole and going nicely. Karl Baker reports that the rotary rig has saved one string of casing so far.

The Caribou Mining & Oil Company, section 22-19-15, has finished well No. 17, and as usual on this section, it is a good producer. The rig for well No. 18 is completed.

The Sauer Dough Oil Company, section 22-19-15, has completed well No. 10, which is making a fine showing. Well No. 9 has been re-perforated and is making about 300 barrels per day.

It is reported that T. R. Turner has sold his interest in the Wabash Oil Company, section 24-20-14. Mr. Turner was one of the pioneers in this company. He is largely interested in the El Cerrito Oil Company.

The B. & B. Oil Company, section 12-20-14, will drill four wells on the east line, and three wells on the north line. The contract has been let to a well-known driller, and the first rig is now being built.

The Twenty Two Oil Company, section 22-19-15, has the new well down about 675 feet with 12½-inch casing. Will Keck, driller in charge, is making his usual good time with this well.

The Coalinga Consolidated Water Company has completed laying the six-inch pipe line and the laterals to care for the new work going on in this field.

The California Monarch Oil Company, section 26-19-15, is 1635 feet deep in well No. 2 with heavy ten-inch, forty-pound casing. Well No. 1 is increasing in her production.

The Bowling Green Oil Company, section 12-19-15, has levied an assessment of one-quarter of one cent per share upon the issued stock for the purpose of further work upon the property.

The California Diamond Oil Company, section 12-19-15, is putting in 4½-inch casing, 15-pound special. It has 2820 feet of hole and has again started drilling.

The stock of the A. P. May, Inc., is being bid for at $11.50 per share. When the new building is completed it will be worth $15 per share.

The Coalinga Peerless Oil Company, section 22-19-15, has completed rig for well No. 14 and will spud in this week.

The California & New York Oil Company, section 12-20-14, has rigged up on well No. 5, and will soon spud in. Old well No. 1 is increasing again in her production.

The Kern Trading & Oil Company has laid a pipe line from section 35-19-15 to connect with its west-side system.

The Claremont Oil Company, section 4-20-15, has resumed operations and is putting in 25-pound, 6⅝ casing. It will be drilling this week.

The Golden Crest Oil Company, section 12-22-15, resumed work October 8th. Superintendent G. W. Warner has returned from his two months' visit East.

The Devil's Den Consolidated Oil Company, section 22-25-18, is reported to be again at work; it is claimed that the formation is showing up better.

The El Cerrito Oil Company, section 14-23-17, will soon test the water in hole, to see if it has been shut off.

H. V. McQuigg, largely interested in this field, came in last week to look over his interests.

Last month the Lucille Oil Company paid its first dividend. The amount is 10c per share and marks a new era in the progress of the company, which commenced producing oil two years ago this month when well No. 1 was completed and heralded as a gusher. During these two years the well has flowed continuously and is now making more oil than when first listed as a producer. From 19c oil the company has paid $16,000 indebtedness on No. 1, installed large tanks, reservoirs, pumps, etc., laid a pipe line to town, built several excellent buildings and drilled well No. 2, and, when money

now due is collected, will not owe a dollar to anyone, after paying the dividend as above stated. Producers are now speculating as to what the company will do in the way of paying dividends from the production of two wells instead of one, and that at 60c oil as against the former price of 19c per barrel. No. 2 promises to outstrip No. 1 in the amount of production.

Production.

During August this field produced a total of 983,700 barrels. This is an advance over a year ago. The total for 1908 will reach 11,000,000. The recent development on the west side and along the edge where the holes are more shallow has had much to do with raising the total, although these do not make each as high a showing as the deeper ones more to the center and on the east side. Of the total, 632,200 comes from the east and 351,500 on the west. The total of oil in stock is 17,100 barrels, an amount too insignificant to be considered. Of this the east side has 15,100 and the west 2000. There are forty-nine wells drilling on the west side, five being deepened, 233 producing and twenty-four new rigs, owned by fifty-nine corporations, individuals and partnerships; on the east fifty-four drilling, nine being deepened, 174 producing and twelve new rigs, a total of 103 drilling, fourteen being deepened, 407 producing and forty-six new rigs. No other district can show half this development. Over a third, according to the best authority—though some estimate it higher—is produced by the California Oil Fields Ltd., its output being about 11,500 barrels a day. It has paid 40 per cent dividends. While it gives out little or no information, it is known that some 3500 barrels go daily to the Associated under an old contract taken over with properties, price 19c. The balance produced goes to the Standard. The price varies according to gravity, but it is reliably stated that the average is 51½c.

The Britishers have wells as follows: Section 10, three drilling; section 14, two drilling, five producing; section 21, nine producing; section 26, three drilling, one producing; section 27, eleven drilling, one deepening, forty-three producing; section 34, three drilling, two deepening, eight producing; section 29, two producing; total, sixty-eight producing, three deepening, twenty-two drilling. All these, excepting two on the southwest corner of 29, are on the east side. The new camp is pronounced the most perfect of its kind in California, probably in the world. Its bunk houses and dining halls for workmen are the best built and furnished, its cottages for officials and men with families are equal to the finest; it has its own machine shops, equipped for making and repairing all tools, machinery, etc.; an ice plant, electric plant, store, etc. The report that the Standard is after this magnificent property is revived from time to time. While it is quite certain that the Standard would like to buy, the chances that the Limited would sell are thought remote, and to agree on any price would be hard. Nobody seriously expects a sale now. The Standard owns all section 28. It has forty-five producing wells, seven drilling, two deepening, six new rigs up to about September 1st. It produces about 90,000 barrels a month. It has had made to its order a large supply of 15½-inch drive pipe, just delivered to be used in reaching the greatest depths.

The Associated has five producers and nine strings running on section 36. Its output is from 18,000 to 20,000 a month. The Kern Trading and Oil Company has the following wells: All section 25-25-14, seven producing, two drilling, two rigs; south half and north half of north half 13-20-14, three producing, two drilling, two rigs, three sets of timber on the ground; all 35-19-15, three drilling, since July 15th; 31-19-15, five producing, no further development contemplated at present; south half and north half of north half 23-20-14, one rig; all 11-19-15, starting camp; all 3-19-15, material for first rig; total producers, fifteen; drilling, seven; new rigs, five. It will be seen that this company is prospecting extensively. Its camp on 11 is north of the Limited and near the Imperial's location on 2. On 35-19-15 it is just south of the Limited's most easterly holdings on 25. The latter's lands adjoin north, northwest corner and west. The location on 3-19-15 is northwest of that on 11. There are fifty-six independent companies, firms and individuals busy on the west side.

Between San Ardo and Bradley, south of King City, the Standard has leased 20,000 acres additional on both sides of the railroad and the Salinas River. According to information indirectly from the railroad people, fifteen cars of rig building material are expected at Bradley in a week or ten days. A rotary has already arrived. Just where it is to be set up can not be learned, but it is almost certain to be on the new land. J. R. McAllister, superintendent of rotary drilling, was one of a large party of Standard officials who have just been over the ground.

SANTA MARIA.

For 1908 Santa Maria's output will not exceed 8,500,000 barrels. This is less than last year, and is due to the invasion of the Western Union, Graciosa and Newlove wells by water, the history of which is too well known to need repeating. The hopes of these companies are centered on their hitherto undeveloped territory. The Newlove has been quite successful with the more recent wells drilled near the center of its tract, and the Graciosa and Western Union are probing on the southern end of their holdings.

The water problem has been practically confined to the south end of the district. While water has appeared in a few other wells, it has never passed beyond control, and is in no sense a problem. With proper handling it is generally believed that it can be controlled in the south.

The Brooks Oil Company, headed by the same Mr. Brooks, will start development shortly on the Blodgett tract on section 30 just west of the Stendel.

The Union has put rigs working on the Bell ranch, one a rotary. This is just south of the 160 acres of the Dome on 26, on the west of the Palmer No. 1. Numbers 1 and 3 are right along the Dome's line, No. 4 a little to the west and No. 2 a little south.

The Dome contemplates drilling shortly on this land, which is entirely distinct from the developed acreage in the main field referred to above. Two rigs are to be erected and water to be prospected for.

Cat Canyon District.

The chief center of interest in the Santa Maria field now is the Cat Canyon district. Several new wells have been started there, many new companies have obtained land and oil leases and intend soon to be in operation.

The New Pennsylvania Petroleum Company has secured the Fugler tract, a little over a mile east of the Palmer well No. 1, and material is being hauled to start drilling immediately. The Henderson Oil Company has a well down a few hundred feet on the Blodgett tract, just east of the Fugler property. The Associated is drilling on the Williams place, within half a mile of the Palmer well. The General Oil Co. is down about 1000 feet on the top of the hills on the Sisquoc Ranch about two miles west of the ranch house. The Kernel Oil Company is working on a well on La Brea Canyon, about a mile northeast of the Sisquoc ranch house. The Ideal Oil Company is down nearly 1000 feet, but has struck some shifting sand and has decided to install a rotary outfit to get through the sand. The Stendel well, another venture of the Palmer people, is drilling about three miles east of the Palmer well. The Foxen well is down about 2500 feet on the Muscio place in Foxen Canyon.

The great Palmer well No. 1, on section 26, between the Union on the Bell ranch south and the Old Mission on the north, from the record already made, is considered good for 3000 to 5000 barrels daily. Though shut down for lack of storage, waiting upon the Associated pipe line, it leaks 250 barrels a day.

Old Field.

The Pinal Oil Company has lately brought in two more wells, Nos. 1 and 9, which this company had deepened, and both wells have come in again with production much larger than before.

The Brookshire well No. 9, the last one being drilled, last week flowed for some time over the derrick. It has since been capped, and will shortly be put to producing.

In the old field, work is going on as usual, with the Union Oil Company far in the lead, and operating about eighteen strings of tools. The other large companies, the Pinal, Brookshire, Dome, Pennsylvania, Rice Ranch, etc., are carrying on their operations vigorously, and several new wells are expected shortly.

The Associated Oil Company has had serious trouble and delay in getting its pipe line from Cat Canyon to Gaviota handling the heavy Palmer oil. It has been found necessary to install four more heating and pumping plants along the line, and when these are completed, it is thought that the trouble will be overcome.

The Carpinteria Oil Company, which drilled two wells below Santa Barbara, has taken a lease on the "Ranchita" property, near Los Alamos, and material has already been shipped for the new derrick.

The Oro Water, Light & Power Company has drilled 1000 feet on the Alexander land, and is through the surface sand.

The Cat Canyon region is undoubtedly to figure largely in the oil industry in coming years. The Associated pipe-line will have to be extended when new wells come in. So far, however, there is no certainty where the successful ones will be, except when close to the Palmer. There is almost a certainty now as to the Stendel well, and this will prove an immense area. As the oil comes from depths of 2500 to 3300 feet, development will necessarily be slow.

Railroad May Build.

It is common gossip that the Pacific Coast Railroad (narrow gauge) contemplates an extension of its branch to the sugar fields on the Suey ranch to Gary, a tiny place at the mouth of Cat Canyon, where supplies can be delivered and oil piped for shipment. The distance to be built is about four miles. There is nothing official as to the company's intention, and it is unlikely to move for another year at least.

The Dome Oil Company intends beginning drilling operations on its Cat Canyon property immediately, and lumber and material is now being shipped to the property.

KERN RIVER.

The output of the Kern River field for September is estimated at 1,400,000 barrels, and for the year at an average of 1,100,000 per month at 13,200,000 barrels. This will not include approximately 1,000,000 barrels used locally, of which no record is made, and so a careful and conservative estimate for the year is 14,000,000 barrels.

The Sunset field will add 3,000,000 barrels, including Midway and McKittrick, approximately the same amount, bringing Kern County's total production to 20,000,000 barrels. It is possible that revised figures will change this estimate, but from present production it is not believed that any material change will be made unless some new and startliiig developments occur between now and the first of the year.

Two wells on the Equality, on 21-28-28, put down seven years ago, are to be cleaned out and deepened, under the management of A. H. Fuhrman, and other development started. It is believed that both wells can be put on the pump as soon as cleaned out.

The Kern Canyon and S. P. Companies, merged into the Emerald, whose property is in section 25 on the east side, will drill the sixth well, having already spudded in. The other five wells, which were drilled six or seven years ago, are to be made as productive as possible.

W. T. Sesnon, who has the Petroleum Center lease on the eastern portion of the territory believed to be oil ground, will not only drill new wells but intends to renew the six old wells, which are expected to produce at the rate of twenty to thirty barrels daily.

The Rambler, a new corporation of Bakersfield people, has taken a lease on the property of the Henrietta Company, and will vigorously work from now on. There are three wells on the property, drilled years ago, two of which are now on the pump and the third is to be opened again at once.

J. A. Stroud, late Monte Cristo manager, has secured a forty-acre tract in the Midway with a well on it and will organize a company to develop the land.

Following the report of two weeks ago that the Midway Crude had found the top sand on 31-31-23, comes the news that the drills have gone through fifty feet of rich sand. This was struck at about 1100 feet. The company is continuing down. As a result of the strike, the Santa Fe has taken up its option on the eighties lying on each side of the Midway Crude lease and has made the first payment on the 50,000 price, to C. V. Scott, owner, who, while owning the land sold, has served as superintendent of the Midway Crude.

Charles Weyr, of this city, has sold for $500 an acre, or a total of $40,000, the northwest quarter of the northwest quarter and the northwest quarter of the southwest quarter of 15-32-23 in Midway. The purchase was made by the Los Angeles Trust Company, acting for unknown parties, popularly supposed to be the Standard, the only ground apparently being that the big company is known to be after land there, and the tracts are good ones, although undeveloped.

The Topaz Oil Company, which has just brought in a well at Sunset, estimated to be flowing 200 barrels, to-day leveled off the site for the second rig. Connections are being made with the loading rack at Sunset, and oil will be sold through the Independent Sales Agency. The gravity was found to be 17.2 at tests made in the Sunset Road Oil Company's laboratories.

The heaviest Sunset, Cal., crude petroleum is successfully used for fuel in some engines, hut it flows too sluggishly to keep up a good even fire in locomotives. The New Center Company, however, is selling it to the McCloud River Railroad, a small line in Northern California. It has to be heated for use. In winter it has arrived as hard as asphaltum, and a bucketful has been set upside down without spilling. Besides its splendid qualities as a road maker, the merits of this petroleum in the making of lubricants are beginning to command recognition from refiners. It is being used for this by Dewar's establishment at Stockyards, the King Keystone refinery near West Berkeley and by the American Oil and Paint Company at San Francisco, all manufacturing high grade lubricants. From Sunset oil are made, among other things, the highest class of cylinder oils. This is from oil a few years since declared almost worthless.

McKITTRICK.

H. U. Maxfield, of the San Francisco-McKittrick, has just returned to San Francisco from the McKittrick field, where the property is located, and reports that the well is now down 200 feet below the place where the gas pocket was found. The well is in the sand and looks like a heavy producer.

The Templor Ranch Oil Company has just been successfully financed by the Lincoln Mortgage and Loan Company of San Francisco, and work has been started on two wells already, in addition to the four already on the pump. It is the intention of the company to start three more wells in the immediate future The company has contracted with the Associated for its entire production, and a tank is now being erected on the ground with a capacity of 37,500 barrels. The Associated is developing adjoining territory.

The Sans Souci Company has one rig drilling on its property.

In the Elkhorn Valley, which lies west of McKittrick, has been developed for a considerable period in a quiet manner by two or three companies, with the result that oil is said to have been found in paying quantities in at least eight instances. The oil is reported to run as high as 34 gravity. Recently four new rigs were hauled in. This is regarded as shallow, but productive territory.

SALT LAKE.

The Rancho La Brea Oil Company has just installed a rotary rig on the north end of the property. It is expected that a depth of 1500 feet will be required to reach the sand, and the rotary will be used to 1100 feet and possibly for the entire depth.

The successful use of air compressors is one of the features of development, the latest to use one being E. L. Doheny on the American Petroleum property in this field.

Drilling for oil is being vigorously prosecuted on the Wolfskill ranch just east of Sawtelle. Since the rotary struck oil, work has been pushed on a dozen other wells, and lumber is being rushed to the scene for additional rigs. South of the tracks of the Los Angeles Pacific Company's trolley line and west of Beverly, and also west of the new rotary-drilled well, one of the tall derricks will be completed by the end of the present week, and drilling will be commenced at once. Just east of Beverly one large steel tank has been completed and the foundation has been laid for another one. These are for the accommodation of the oil from the new wells, which are adding many hundred barrels to the daily output of the new district. Other wells are being sunk in the vicinity of Vineyard and Bonita Meadows. This is as yet an undeveloped district. No wells have been struck there, although years ago several prospect holes were sunk without success.

NEW OIL DISCOVERIES NEAR TRACY CREATE EXCITEMENT AND THOUSANDS OF ACRES OF LAND ARE BEING TAKEN.

A new and profitable oil field is promised for California by recent discoveries in San Joaquin and Alameda Counties. An indication of the interest being taken in this district is the activity of the Standard Oil experts, who have made a thorough investigation of the lands between Tracy and Byron and in Alameda County as far west as Livermore and vicinity.

It is understood that the Standard people have tied up over 5,000 acres of ground as a result of their investigations. The reason for all this is that the oil discovered is of much higher grade than any now being produced in the State, samples from one well at Antioch being of 52-gravity paraffine, especially adapted for refining purposes. In quantities the oil should be worth in the neighborhood of $2 per barrel, as oil of similar character in Eastern fields is quoted around $1.80 per barrel.

Considerable prospecting has heretofore been done in the vicinity, but along lines that have proved very costly and without results. It appears that some of the drilling has been entirely misdirected, owing to a lack of proper appreciation and investigation of the formation.

The well being put down by Frank Horton and William Busey of Goldfield, and Boyd L. Wilson and associates of San Francisco, near Midway, is reported down 900 feet, nearing the oil sands, which are said to be forty feet thick. As an earnest of the confidence of these people it is stated that 10,000 acres of land have been optioned. Experts declare that there are better indications than in any of the old, established fields of the State.

The Daisy Oil Company has been organized to develop, and is one of the active stocks on the San Francisco exchange, selling at 30 cents.

The Monterey Southern Oil Company has secured options on several tracts of land, and expects to start drilling operations very soon. It is understood that these options name the purchase price as $250 per acre, with the usual royalty on production. Prices on land have already felt the effects of the discoveries and are advancing.

The magic effects upon the minds of people in the vicinity is already noticeable, and if the results during the next few weeks are equal to anticipation there will be nothing short of a big rush into the district. No one not thoroughly in touch with oil can realize the tremendous excitement that is developed with new and permanent openings of oil in paying quantities.

This field will be watched with great interest by the public as well as by oil operators. It is reached in a short ride from San Francisco over the Southern Pacific by the way of Niles.

MINING MEN TURN TO OIL.

The San Joaquin Oil Company has just been organized with a capitalization of 500,000 shares under the laws of California. Of this, 250,000 shares have been set aside for the treasury of the company to be sold for development purposes. The officers of the company are F. H. Lathrop, president; F. E. Horton, vice-president; Boyd L. Wilson, secretary and treasurer, all Nevada mining men who see great prospects for the development of a permanent and exceedingly profitable oil field in Alameda County near Midway, where the property is located.

The company is preparing to drill in section 29, T. 2, S. P. 4 East, near the well now being drilled by the Daisy Company

The best of surface indications have been found, and every encouragement is offered to push drilling operations. It is expected that a depth of from 1,000 to 1,200 feet will be required to reach oil sand.

J. F. LUCEY EXTENDS BUSINESS.

J. F. Lucey, the well known supply man of Los Angeles and Coalinga, is branching out and will establish stores in Maricopa, Midway, McKittrick and Bakersfield. The first store to be opened will be at McKittrick, where Mr. Lucey has secured the old Gypsum warehouse. A $75,000 stock of supplies will be put in.

Mr. Lucey's headquarters will be moved from Coalinga to Bakersfield, into the Bank of Bakersfield building. H. A. Hopkins, formerly with the National Supply Company, will take charge of the Kern County business.

OPERATIONS IN HUMBOLDT COUNTY.

The organization of the Northwestern Oil Company at Eureka, in Humboldt County, is the result of prospecting work which has been going on in the southern portion of the county for the past few months. It is the avowed object of the company to put down a well as fast as possible. Should oil in commercial quantities be encountered, it will mean much to that portion of the State, as Humboldt County is without railroad facilities, and all incoming products must reach there by water and wagon transportation from the port of Eureka. A home market for the crude product may be expected, which would undoubtedly take a considerable production.

The officers and directors of the company and those principally interested financially are H. J. Geering, Fred E. Peaslack, W. Ernest Dickson, of Eureka, and Milton McWhorter and Walter N. Clarke of Capetown.

OIL IN OREGON.

Ontario, in the eastern part of the State of Oregon, is enjoying a little excitement over the prospects of oil in the immediate vicinity. The geological formations are said to be very similar to those of Southern California, and a company has been formed for the purpose of drilling test wells. A drilling outfit of the largest and most improved type has been secured, and four wells of at least 2,000 feet in depth will be sunk at once. The company has 12,000 acres of land under lease. The officers and board of directors are composed of leading business men of Spokane and Ontario. There are said to be about fifty drilled wells in the vicinity of Ontario, ranging from 200 to 600 feet in depth, which have been producing a limited, but constant flow of natural gas since they were drilled, and some of them have been sunk as long as eight years. One in particular, at a private residence in Ontario, has been improved and utilized to the extent that it has furnished all the gas required for cooking, heating and lighting purposes for the last four years. This would imply a very small production of gas, but which might be accepted as indicating a larger supply at a greater depth.

EASTERN OPERATIONS ACTIVE.

In the Eastern oil fields a large amount of drilling is in progress, although the completed wells were slightly fewer in September than in August, with a very small decrease in new production.

Statistics show that nearly 1,600 wells were completed in September in the various districts including the Mid-Continent field, and not including the Southern sections. Of this number over 300 were dry, but over 33,000 barrels of new production was added. Over one-half of this amount is credited to the Kansas-Oklahoma country. The average of the wells in this section was nearly sixty barrels, while the average of all the Eastern wells was less than fifteen barrels.

Drilling operations during the month showed a considerable increase, there being between 800 and 900 drilling in Pennsylvania alone; over 500 in other Eastern fields and about 450 in the territory beyond the Mississippi.

OIL NOTES.

There are 800 miles of pipe line in the State of Oklahoma, all of which is authorized by the Interior Department. During the past year 580 miles of right of way were approved by the department. In addition to the building of the two lines to the Gulf, lines for gas to Muskogee and Oklahoma City were authorized. The pipe line companies paid ten cents per rod for right of way except through uncultivated lands, where they were required to bury the pipe a sufficient depth not to interfere with cultivation. Special damages have been paid by the pipe line companies wherever in the judgment of the department damage was inflicted, but it is impossible to get at the figures paid for rights of way and damages. There are also no figures of the amount invested in pipe lines and equipment, but it is roughly estimated at $45,000,000. This would bring the total investment of the producer and the pipe line companies in the State to $93,000,000, exclusive of tankage.

The Wyoming & Oklahoma Oil & Gas Company will sink a well in the oil fields at Bonanza, Wyo., where, it is claimed, the richest illuminating oil in the world was discovered several years ago. Heretofore the fields could not be developed profitably, owing to their remoteness from lines of railway, but now that the Burlington Railroad runs within a few miles of the fields, it is expected a number of wells will be brought in soon and regular shipments of oil made to the refineries.

Runs of the Pennsylvania, Ohio, Indiana and Illinois fields in September averaged about 145,364 barrels a day; shipments averaged 182,642 barrels.

A company has been organized to drill for oil in Stewart's gulch, four miles northwest of Boise, Idaho. The company has been organized with a capital stock of $250,000, and is known as the Boise Valley Oil Company. Work on a well to be driven to great depth will be begun at once. There have been no developments in the Idaho oil fields for the past three months, but search for the fluid will now be renewed at several points.

In an earthen tank which was struck by lightning in a recent storm in the Sour Lake, Tex., oil field, there was four feet of water and on top of this fluid was a coat of oil measuring three feet. As soon as the three feet of oil reached the boiling stage the heat was extended to the water below and soon had it boiling, and the steam from the water found its way out through the oil, which was the only avenue by which this power could escape, and just before the sun went down the flames died out as suddenly as they had leaped into existence two hours before. The quenching of flames emanating from an oil tank was unheard of by all the oil men in that section until recently, and the precedent thus established will no doubt be used to good advantage by those who have oil in storage in the future.

During the convention of the County Commissioners of Pennsylvania, at Greensburg, Pa., a visit was made to the fine roads of Alleghany County, adjacent to Pittsburgh, which have been treated with oil. The visitors were greatly impressed with this method of keeping down the dust on thoroughfares used largely by automobiles, and Commissioners Price and Clark, and Road Engineer Barnsley, of Alleghany County, who acted as hosts, were kept busy answering questions as to the cost, durability and method of application. A demonstration of the latter was given.

India imports more than 10,000,000 gallons of kerosene oil monthly. Of this, 6,000,000 gallons go to Calcutta, 3,000,000 to Bombay, and 1,000,000 to Karachi.

From Kansas comes news of the successful application of crude oil in the making of artificial rubber, and if the report be correct that the substitute made is almost imperishable, and will stand a strain doubly as great as the natural rubber, the invention immediately becomes the most important made for many years. It would appear that the discovery has for months been carried to practical results, for each day large quantities of the new substitute are being placed on the market. The factory is at present capable of treating about 1,000 barrels of crude oil. The distillate is run off, and then the residue, by mixing with it a small proportion of pure rubber, becomes a rubber substitute, which is claimed to even be far superior to the real article. Time will, of course, tell as to how far the substitute is economical in use, but from present indications, it seems that so satisfactory has it been found, that for the present, there is great difficulty in fulfilling orders. Without a doubt, the discovery opens a very wide field for activity. Not only is the market without limit, but hitherto a lasting substitute for rubber has not been found.

The week's summary of results in the fields of West Virginia, Pennsylvania, Ohio, Indiana, Kentucky and Illinois show 203 completions, forty-two dry holes and a new production of 7,123 barrels, while for the former week were recorded 236 completions, forty-six dry holes and 9,632 barrels of new production.

The daily average of shipments in the mid-continent field for the first twenty-one days of September reached 82,622 barrels, the highest average ever attained in that field.

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RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Derrick, Patrick Yorke, Washington, Pa., 898,027.

Machine for forming packing-cups, Chas. Swan, Corry, Pa., 898,526.

Middle ring for pipe-couplings, Jas. Clark, Bradford, Pa., 898,723.

Pump, Sidney R. Blanchard, Ottawa, Ill., 899,784.

Well-pumping apparatus, Wm. M. Stephenson, Batson, Tex., 899,921.

Well pulling-machine, Harmon Bickel, Franklin, Pa., 899,943.

Drill-rope coupling, Wallace W. Parmeter, Eldred, Pa., 890,091.

Feed for well-drilling apparatus, Robert C. Jones, New Cumberland, W. Va., 890,236.

Well-drilling machine, Henry L. Hoopengarner, Shirley, W. Va., 890,280.

Expansion-bit, Chas. A. Butler, Bartlesville, Okla., 890,493.

Deep-well packer, Chas. M. Heeter, Butler, Pa., 891,065.

Appliance for gas-mains, Mitchem W. Offutt, Philadelphia, 891,854.

Deep-well cable-pump, Harry C. Sillett, Salt Lake City, Utah, 892,093.

Oil-well pumping mechanism, Daniel R. Blakeslee, Vanburen, Ind., 892,120.

Oil-well pumping mechanism, Daniel R. Blakeslee, Vanburen, Ind., 892,354.

Method of treating cold crude petroleum or distillate thereof to obtain an explosive mixture for internal-combustion engines, Dan Martini, London, England, 892,378.

Oil and water well strainer, Harry R. Decker, Houston, Tex., 895,733.

Bailer, Fred J. Moser, Kane, Pa., 896,566.

Gas-trap for oil-wells, Reuben C. Baker, Coalinga, Cal., 896,967.

Standing valve, Frank Freeman, Geneva, Ind., 897,078.

Ratchet-swivel rope-socket, Charles Daniel, Los Angeles, Cal., assignor to Edward Double, same place, 897,196.

Casing-spear, Monroe W. Carroll, Beaumont, Tex., 897,250.

Well-drilling machinery, Harry R. Decker, Houston, Tex., 892,409.

Well-packer for oil-wells, Elmer E. Tirk, Franklin, Pa., 892,776.

Under-reamer, Robert E. Simpson, Bakersfield, Cal., 892,905.

Device for detaching and attaching the sections of pumping or sucker rods, Robert S. Gauer, Lindsay, Ohio, 893,318.

Pumping-jack, Calvin J. Engle, Portland, Ind., 893,909.

Pipe lifting and gripping appliance, George J. Hauk, Carmi, Ill., 894,138.

Deep-well drill, William Hutchings, Ishpeming, Mich., 894,147.

Tank car, Charles A. Shoemaker, Chicago, Ill., 894,294.

Manufacture of drills or bits, Lewis D. Brown, Butler, Pa., 894,589.

Apparatus for bailing oil wells, Linus W. Brown, Bakersfield, Cal., 894,590.

Adjustible reamer, Peter E. Johanson, Warren, Pa., 895,090.

NEW INCORPORATIONS.

Eldee Oil Co., capital stock $500,000, shares $1 each. L. D. Weiss, M. L. Euphart, J. Gunzburger, R. L. Hughes and R. W. Landau. Place of business, San Francisco.

Anaconda Oil Co., capital stock, $100,000, shares $1 each. C. A. Son, Julius Levy, Morris Mitau, Julien Hart and Julius Behrend. Place of business, San Francisco.

Royal Oil Co., capital stock, $10,000, by C. E. Currier and others. Place of business, Los Angeles.

Essex Oil Corporation, capital stock, $50,000, shares $1 each. F. E. Fitzpatrick, L. W. Pryor and Edward Fox. Place of business, San Francisco.

San Joaquin Oil Co., capital stock, 500,000 shares; par value, $1; 250,000 shares treasury stock. F. H. Lathrop, president; F. E. Horton, vice-president; Boyd L. Wilson, secretary and treasurer; office, 359 Bush St., San Francisco. Property, Alameda County.

The Pearl Oil Company has been incorporated with C. A. Canfield, J. S. Schirm, Eugene Germain, W. E. Watson, B. B. Lathbury and Carl Leonardt as directors, all Angelenos. It will develop the tracts on 15-32-23 acquired recently from the Bay City and Casa Oil Companies at Midway.

The Jade Oil Company, incorporated for $1,000,000. The incorporators are C. A. Canfield, J. S. Schirm, Eugene Germain, W. F. Watson, B. B. Lathbury, Carl Leonardt and George Mack The company is a Los Angeles concern.

Another Los Angeles company to incorporate is the Sapphire Oil Company, which files for $1,000,000. Its directors are J. M. Danzinger, W. Morgrage, J. W. Jameson, W. E. Watson, B. B. Lathbury and A. E. Broome.

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FOREIGN MARKETS.

RUSSIAN POSITION.

Very little change has occurred in the quotations on the Baku market during the month of September. Slight fluctuations have occurred, and the tendency is a firmer one, owing to the fact that with the approaching close of the Volga navigation buyers have come forward to replete their stocks for the interior. The latest quotations are as follows: Crude oil for prompt delivery, 21 copecks per pood, free on rail Baku; residuals for prompt delivery, 21 copecks per pood, free on rail Baku. Kerosene for delivery during the navigation of the Volga is quoted at 26 copecks per pood free on rail.

The total production of crude oil in Russia during the month of August, old style, was 38,973,000 poods—a little more than was estimated. For August the figure reached 39,303,000 poods. The production over the first seven months of the year averages over 1,000,000 poods decresae per month compared with the same period of 1907, and this in spite of the fact that labor troubles have been fewer. Taking also into consideration the fact that the oil fields have witnessed greater activity during the first half of this year than in the corresponding period of the previous year, the inference seems to be that the production of Russia is declining.

ENGLISH MARKET REPORT.

September has brought better prices and good trade for the English markets. In London the quotations have risen 5/8d. per gallon, and in Liverpool the quotations have risen to the same extent.

The quotations are now as follows:

London.

Russian oil, 5 7/8d. ex wharf in barrels.
American oil, 6 3/4d. ex wharf in barrels.

Liverpool.

Russian oil, 6 3/8d. ex wharf in barrels.
American oil, 7d. ex wharf in barrels.

INDIAN MARKET REPORT.

No considerable change has occurred in the prices on the Indian markets, although many small fluctuations have taken place. The trade during the month has continued brisk, and the markets remain steady.

LATEST OIL STOCK QUOTATIONS.

The following are the latest official quotations of California oil stocks listed on the California Stock and Oil Exchange:

Alma	.....	.....
Amalgamated Oil	$ 86.00	.....
Apollo	.02	.....
Associated Oil Tr. Cer.	33.50	$33.75
Associated Bonds, 5s	81.00	.....
Caribou	13.00	.....
Chicago Crude	.07	.....
Claremont	1.35	.....
Coalinga Pacific	1.00	.....
Daisy	.30	.31
Four	.23	.26
Fulton	1.75	2.00
Graciosa	.36	.45
Hanford	.....	.....
Home	.50	.....
Kern	.10	.....
Kern River	6.50	.....
Linda Vista	.29	.....
Monte Cristo	1.25	.....
Occidental	.25	.30
Peerless	3.00	3.75
Pinal	11.00	.....
Record	2.00	.....
Rice Ranch	.....	1.05
Royalty	1.50	.....
S. F. & McKittrick	11.50	.....
Sauer Dough	2.00	2.25
Sterling	.....	2.50
Sunset Monarch	.45	.....
Superior	.15	.....
Thirty-three	1.70	.....
Union	.....	240.00
Wabash	1.35	1.55
Wolverine	.30	.....
W. K. Oil Co.	1.00	.....
Western Union	.....	98.00

EXPORTS OF AMERICAN PETROLEUM PRODUCTS.

The annual exports of petroleum products from the United States to foreign countries now amount to more than a billion gallons, according to David T. Day, of the United States Geological Survey, whose report on the production of petroleum in 1907 has just been published as an advance chapter from "Mineral Resources of the United States, Calendar Year 1907."

The statistics for the year ending June 30, 1907, show total exports of crude, 128,175,737 gallons; naphtha, 26,357,054 gallons; illuminating, 894,529,432 gallons; lubricating, 136,140,226 gallons, making a total of 1,057,026,712 gallons of refined. There were also shipped 65,228,009 barrels of residuum.

With all facilities for correct compilation of statistics at hand, it seems a shame that official figures cannot be obtained until fourteen months have passed.

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ODD STATISTICS.

The Mid-continent oil field is credited with a daily oil production of something like 130,000 barrels for the past two years. Few people have any idea of what this amount of production means. Some interesting figures were made by J. Robert Brunham, a Tulsa civil engineer, on the subject, as follows: Crediting the Mid-continent oil field with a daily production of 130,000 barrels of oil for 600 days of activity since the field was discovered, we have a total production of 78,000,000 barrels. This production would make a column of barrels one on top of another over 33,000 miles high, or if placed end to end would girdle once around the earth and leave 8,000 miles of barrels to fill a bore through the earth from pole to pole.

Reducing this oil to cubic measurement it represents a column of oil one foot square 82,727 miles high, equivalent to a lake that will cover a section or square mile of land fifteen feet eight inches deep. If this oil were poured over the surface of Tulsa County, 522 miles in area, evenly, it would cover the entire surface of Tulsa County three-eighths of an inch deep, or gathered up in barrels would give 234 barrels standing on every acre of land in Tulso county. It would require a three-inch pipe some 1,700,000 miles long, or over seven times the distance from the earth to the moon to carry the oil, which, if poured into the normal channel of the Arkansas River would float a boat from Tulsa to Muskogee without any assistance of the National Deep Waterways Commission. The money value of this natural product of the earth per day at forty cents per barrel means over $50,000 per day, and the fluctuation of so little as one cent per barrel makes a difference of over $1,300 per day to the area of its production. One cent per barrel, rise or fall in price, means a gain or loss of over $500,000 per year to the producer of the oil in the Mid-continent field.—Independence (Kan.) Daily Reporter.

INCREASING EXPORTS.

The foreign demand for mineral oil is increasing rapidly, as is evidenced by the Government report of exports from seaports not including the Pacific Coast. For the eight months ending August 31, 1908, there were shipped 926,082,311 gallons, worth $68,950,127. Shipments during the same period of the four preceding years were as follows:

1904	643,838,523	51,461,972
1905	762,381,804	49,896,166
1906	776,514,219	53,830,356
1907	770,530,526	55,702,174

It will be seen that the present year shows a high percentage of gain both in quantity and in value of exports. A still larger increase would be noted if Pacific Coast shipments were included in these figures. The figures would be brought to nearly 1,000,000,000 gallons, with value close to $70,000,000.

The Kern Associated Oil Company, organized under Arizona laws: 1,000,000 shares: 400,000 shares treasury. C. A. Orr, Berkeley, president; Chas. T. Burke, Oakland, vice-president; Herbert M. Orr, San Francisco, secretary and treasurer. Financial agents, Jos. J. Hogan Co., San Francisco. Property N.W. ¼ of the N.W. ¼, 11-29-28, Mt. Diablo, forty acres.

The product of petroleum by the Burma wells for 1907 shows an increase over the previous year. The number of gallons for 1907 was 148,888,002, valued at $2,997,942, against 137,654,221 gallons, valued at $2,823,330 in 1906, and 142,063,846 gallons, valued at $2,997,302, in 1905.

Despite the fact that many wells are coming in regularly in the Mingo field, Jefferson County, Southeastern Ohio, the production of the pool shows very little increase. The decline of some of the best producers has been very rapid. The Mingo pool is now credited with thirty-five producing wells and their aggregate production is estimated at 1,725 barrels a day. The present month will probably see the end of the town lot development at Mingo. Of those completed up to the present time more than one-third have come in dry, or so light as not to make paying producers. On the Laying, Risdon, Miller, Vankirk and McKee farms there is room for additional development work.

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Vol. 1 San Francisco, Cal., November, 1908 No. 9

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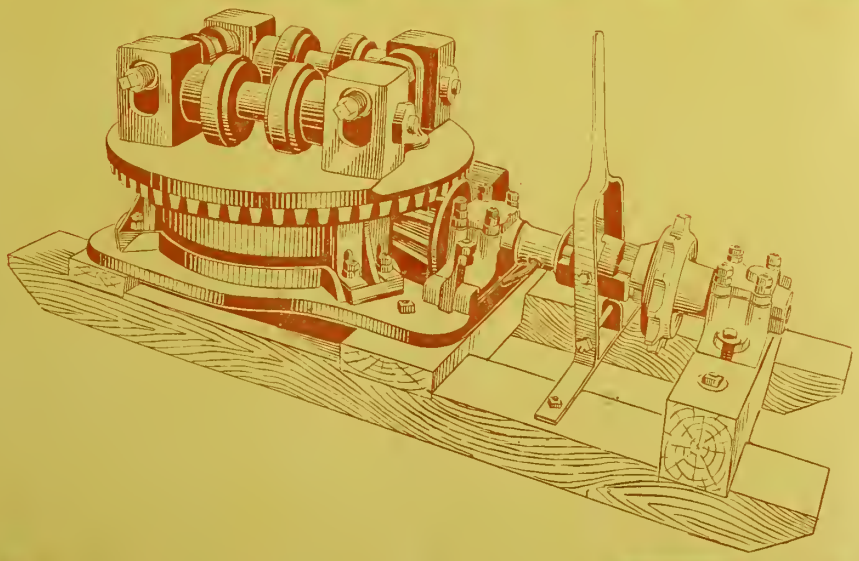

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THE AWAKENING TO OPPORTUNITY

A real comparison of prices on the exchange on oil stocks between those now prevailing and the quotations of a year ago is impossible. Then there were days and days when not one stock had a bid and offer at the same time. There were days and days when the call was purely perfunctory, and consisted simply of the caller going through the list, interrupted only occasionally by some broker making a quotation on some stock. That was all. There was not as much trading then in a week, two weeks, and sometimes a month, as there is now in a day. If two or three different stocks were traded in on the same day that day was a record breaker.

Now all is changed. The brokers are beginning to awaken to the possibilities of the business. Around the rail there are now dozens of people where not a single soul approached at this time twelve months ago. To a majority of the people the existence of an oil exchange was practically unknown.

There is a difference, then, between today and yesterday. The public and the brokers are beginning to sit up and take notice. The buying is increasing from week to week, and prices are advancing with every new demand and with every new buyer. Speculators and investors are edging up to the opportunities in dividend-paying listed stocks, and, when they buy, to their surprise they find they have something that is wanted by others and a profit at once appears.

A buyer can go into the market blindfolded and the chances are more than even that he would select a dividend-paying stock for more than half the listed stocks are dividend-payers. He would stand about one chance in ten of getting a stock that is levying assessments. He would have one chance in ten of getting a stock that might show a decline. It will be seen, therefore, that, with his eyes open, he could eliminate practically all chances of losing money because he would then select a stock that was practically sure of advancing materially.

Taking all things into consideration, the increasing interest and consequent speculative demand for these stocks, the actual physical conditions prevailing in the oil business today, the immediate prospects for still further advance in the price of oil, nearly all of which is to be clear profit, increased drilling and consequent increased production, thereby adding to the earning power of the stocks, investment in good oil stocks can result only in handsome profits.

Following is a comparative table, showing the latest quotations, the prices in March and those of a year ago on a few stocks:

Stock.	Bid.	Asked.	March.
Associated	$38.00	$38.25	$28.50
Brookshire	1.50	1.80	1.50
Caribou		13.00	
Claremont	1.62		1.00
Daisy	.28	.29	
Esperanza	1.30	1.55	
Four	.30		.15
Fulton	1.75	2.00	
Graciosa		.45	
Gypsy	.25	.26	
Home	.75		.08
Illinois Crude	.11	.35	
Imperial	26.00		
Junction	.70	.75	.35
Kern	.10		
Kern River	8.75		
Linda Vista	.30		
Lucile	9.50		
McKittrick	.25		.20
Monte Cristo	1.80		.30
Occidental	.26		.05
Peerless	4.25		3.00
Piedmont	.16		.14
Pinal	10.00	10.75	
Radium		.50	.30
Record	1.90		
Royalty	1.90		
S. F. & McKittrick	19.00		8.50
Sauer Dough	2.25		
Shawmut	.50	.65	
Sovereign	.21		.15
Sterling	3.60	4.00	2.00
Sunset-Monarch	.80	1.00	.20
Superior	.20		
Thirty-three	2.00		
Turner	.50		
Wabash	1.00	1.55	
Wolverine	.35		
W. K. Oil	1.25	1.50	
Section 25	8.00		
Paraffine	.30		
Producers	1.75	2.00	
S. W. & B.	.30		

Last year at this time Associated was selling at $23.50; Claremont, $0.65; Monte Cristo, $0.25; S. F. and McKittrick, $4.00; Sterling, $1.50; Caribou, $9.00; Fulton, $1.00; Home, $0.06; Imperial, $18.50; Junction, $0.25; Sauer Dough, $1.50; Sovereign, $0.13; Sunset-Monarch, $0.14.

A BRIEF HISTORY OF THE PRODUCTION OF ASPHALT FROM CALIFORNIA CRUDE.

By F. H. Dunham, Los Angeles.

The production of oil asphalt from California crude oil was begun about twenty-one years ago in a small plant located at Ventura, Ventura County, Cal. The material was manufactured for the use of Prentice & Beardsley, whose business was afterward taken over into the Paraffine Paint Company, who have continued its manufacture and use and have built up a large business in the preparation of their various brands of ready-made roofing and paints.

In January, 1889, the writer began the construction of a refinery for the Mission Transfer Company, at Santa Paula, Ventura County, Cal., for the purpose of manufacturing all the various products possible to obtain from the local crude. This was the first attempt on the part of oil producers to do more than to try to produce an illuminating oil. A market was soon obtained for the oils manufactured, but although the capacity of the refinery was comparatively small and the output of asphaltum only about five tons per day, or a little over 125 tons per month, it soon began to accumulate.

The manufacturers of water pipe furnished custom for a part of the asphaltum, but here one of the first difficulties in the marketing of this material was encountered, as we could not always identify the material by an order reading: "Send us six tons of asphaltum similar to last sent."

As various degrees of hardness were called for, it was then determined to grade the asphalt by letters, choosing the letter A for the hardest grade and running through B, C, and D for such material as could be packed in slack barrels. This method of identifying various degrees of hardness, instituted at that time, still remains in vogue, although some firms, for the purpose of identifying their own material, have made such extensions as Benito, Casco, and Durango, and in place of the letters G and L used as special designations of liquid asphalt, use the term Grizzly.

After adopting the method of classification, efforts were made to find a market east of the Mississippi River. The difficulties encountered are well illustrated in one case in which storage charges were paid for a number of years on a portion of a carload that was shipped to Cincinnati, Ohio. A long-continued effort was made to have this lot introduced in street work, but the unfamiliarity of the material, together with some doubt as to the ability to furnish a constant supply, militated against its use.

Better results were obtained in New York, where one concern began to use the B and C grades in the production of dip paints and the D grade for making roofing material.

California asphalt seemed now to have found a place in commerce. Grade D appeared of the right consistency for paving purposes, but its use was decried by the users of Trinidad material.

At the time of the opening up of the Los Angeles oil field in 1893, a refinery was started in Los Angeles. This plant consisted of one 100-barrel still, and the projectors started out to capture the market for roofing and paving material.

Some degree of success seems to have attended their efforts, as a second and afterwards a third still was added to their equipment. Other refineries were built at Los Angeles, and in 1901 a large amount of asphalt was being shipped east and the material began to be sought after by paving contractors.

In the meantime the Union Oil Co. removed its refinery to Oleum, Contra Costa County, and immediately following the opening up of the Bakersfield oil field, numerous plants were established in that locality. The principal shipping points now are San Francisco, Los Angeles, and Bakersfield.

The first year's output amounted to scarcely more than a thousand tons, with sales of less than half that amount, aggregating less than $10,000, while the present year's produciton will approach 100,000 tons, of the value of $1,000,000.

The primitive method of determining the grades of asphaltum by chewing, which method is still used as a "first aid" to reach a conclusion as to the hardness of the material, is now supplemented by the machine using a penetration needle and analysis by carbon bisulphide and carbon tetro-chloride tests, which help in eliminating undersirable material from the ashalt used for street paving.

But it is apparent that grave faults still exist in the material manufactured by present methods, the main difficulty being to secure a uniform penetration with an absolute purity of material. As yet there is no concern manufacturing asphaltum that is using the most economical method of producing asphalt cement, but the writer of this, having seen the business grow from a very small beginning to its present proportions, expects to see an organization come into being capable of producing the highest grade of material at a minimum cost and is as determined to place California asphaltum in Eastern cities as a paving material as the exploiters of the Trinidad material are to shut out the product of this State.

When that is done, California will come to its own as an exporter and the output will be more than double the present figures.

OCTOBER IN EASTERN OIL FIELDS.

The general summary of oil operations for October shows a decline in the number of wells completed, accompanied by a large gain in the new production, says "Oil City Derrick." There was also a general increase in field activity. The decline in the Pennsylvania and Illinois oil regions was more than offset by the increased production from the Mid-Continent districts. The result was that while wells completed show a decrease of nearly a hundred, there was a gain of over 5,000 barrels in the new production. Compared with October, 1907, the past month shows a decrease of 260 wells completed, 20,272 barrels production and 53 dry holes. September completed nearly as many wells as August, and the decline in the new production was less than 800 barrels.

October witnessed the completion of 1,462 new wells in the principal oil producing States, and 305 of them were nonproductive, while the new production amounted to 38,926 barrels. This was a decline of 95 wells completed and 28 dry holes, and a gain of 5,113 barrels in the new production. On the last of the month there were 474 rigs and 1,321 drilling wells under way, a total of 1,803 and the largest on record since October a year ago. There were 1,557 wells completed in the different oil producing sections during September, including 333 that were devoid of oil in paying quantities, and the new production amounted to 33,813 barrels. This was a decline as compared with August of 15 wells completed, 766 barrels new production, and a gain of 33 dry holes.

In the high grade oil fields of the Eastern States, there was a decline of 58 completed wells, 931 barrels new production, and 22 dry holes. At the same time there was a gain of 19 rigs, and a loss of 6 drilling wells. During September the high grade oil fields of Pennsylvania, West Virginia, etc., made a gain of 63 wells completed, 1,049 barrels new production, and 18 dry holes. There was also a gain of 31 wells drilling, and 33 rigs, making a net increase of 64. The average yield of the new wells was 11 barrels apiece in September, and 10 barrels in October.

In the Trenton rock oil fields 133 wells were completed in October, with 12 of them dry and a new production of 1,744 barrels. This was a loss of 12 completed wells and a gain of 237 barrels in the new production. The rigs and drilling wells made a net decline of 10. There were 225 wells abandoned in October, 297 in September, and 361 in August. There were 134 wells and 11 dry holes completed in the Lima oil fields of Northwestern Ohio and Indiana in September. There was an increase of 18 wells completed and 323 barrels production in these districts during September, and a net gain of 8 in field developments.

The Illinois field revealed another decline in wells completed and new production, which was the smallest recorded since April last. The record was 290 wells completed, 6,091 barrels new production, and 51 dry holes. This was a decrease from the September figures of 54 wells completed, and 1,757 barrels production. In September 73 fewer wells were completed than in August, and the decline in new production was 474 barrels. August in the Illinois oil fields recorded a general decline of 57 wells completed, 1,153 barrels new production, 10 dry holes, 33 rigs, and 37 wells drilling.

Kentucky completed 20 wells in October, with 5 of them dry, and the new production was 242 barrels. This was a gain of five wells and 47 barrels production. Field operations were an exact stand-off with September. Only 15 wells were completed in September, and the new production was 195 barrels, the same as in August. In field operations there was a gain of 3 drilling wells.

In the Mid-Continent oil fields 326 wells were completed in October, including 38 dry holes and 43 gas wells, and the new production figured up 25,495 barrels. New operations at the close of the month were composed of 59 rigs and 305 wells drilling. This was an increase of 24 completed wells, 7,517 barrels new production, 14 rigs and 48 wells drilling. There was a decline of 4 dry holes and 4 gassers. The September record was 302 wells completed, 17,978 barrels production, 42 dry holes, and 47 gas wells.

In the following table will be found the summaries of wells completed, new production and dry holes in the various oil-producing sections during October:

State.	Comp.	Prod.	Dry.
New York	42	67	3
Pennsylvania	393	962	58
West Virginia	117	1,912	40
Southeastern Ohio	142	2,413	55
Northwestern Ohio	95	1,443	6
Indiana	38	301	6
Kentucky	20	242	5
Illinois	290	6,091	51
Kansas	61	80	57
Oklahoma	263	24,915	24
N. La.	2	500	..
Total	1,462	38,926	305
Total September	1,557	33,813	333
Difference	95	5,113	28

GEOLOGY AND OIL RESOURCES OF THE COALINGA DISTRICT.

A Rich Field.

The Coalinga oil district of California has yielded in the last ten years more than 45,000,000 barrels of oil, and it is probable that the production of 1908 will bring the total output to nearly 50,000,000 barrels. In 1907 it ranked third among the oil-producing districts of the State.

Location and Development.

Geographically, the Coalinga district comprises a strip of land about fifty miles long by fifteen miles wide lying along the northeastern base of the Diablo Range in Fresno and Kings Counties; but the proved productive territory within the district includes a band thirteen miles long by three miles wide at the north end and a narrow strip along the southwestern boundary. Within these areas there are now in operation 395 productive wells, and between seventy-five and one hundred wells are being drilled. Seventy-five wells have been abandoned. These wells range in depth from 600 to more than 3,300 feet, penetrate from twenty to more than 200 feet of productive sands, and yield from three or four barrels a day, as in individual wells in the Oil City field, to as much as 3,000 barrels a day for the deeper holes in the Eastside field. The product varies from a black oil of 14 degrees or 15 degrees Baume to a greenish oil of 35 degrees Baume or better.

Preliminary Report by Government Geologists.

In the summer and fall of 1907 Ralph Arnold and Robert Anderson, of the United States Geological Survey, made a detailed geologic investigation of the Coalinga field proper, and of the territory south of it as far as the Kings-Kern County line. In order to make the results of this investigation available as soon as possible a preliminary report has been prepared by Messrs. Arnold and Anderson and has just been published by the Survey as Bulletin 357. More detailed descriptions of the conditions, more complete maps, sections, and other illustrations, and chemical analyses and calorific tests of a large number of the oils will be presented in a later report. The present report includes a description of the topography, geology, and oil fields of the district and a discussion of the origin, character, and occurrence of the oils. It is illustrated by a geologic and structural map of the Coalinga district and a structural contour map of the Coalinga oil fields. By means of this contour map the direction and amount of the dip of the strata in any oil-bearing formation may be calculated for any point in the field, and the depths to the various productive sands or zones may be approximated for most parts of the territory.

Future of the District.

Concerning the future of the field and the advantages of co-operation among operators, the authors say:

"The outlook will continue to be bright for the development at Coalinga of one of the greatest fields in California if each and every operator will conserve to the utmost the wonderful supply of oil stored within the boundaries of the district, and by wise management aid in keeping it available. The amount of available oil in the territory covered by the underground contour map is estimated at 2,825,000,000 barrels. Contrary to the belief of some people, the underground resources of the earth are not inexhaustible; when the oil in any field is once gone it will not be replaced for many centuries, if ever. It may be true that the processes of oil formation and migration are constantly taking place in some localities, but such processes are so exceedingly slow, if measured in years, that for practical purposes they may be considered as having ceased altogether.

"Fortunately the Coalinga field has had little serious trouble with water. But such trouble is beginning to show its effects in certain parts of the field, and, through accident or carelessness, some wells not yet abandoned are believed to be letting water into sands that are productive in not far distant wells. It seems shortsighted for one operator to withhold from his neighbor his logs and other information about underground conditions, when this very withholding may be the cause of his neighbor's flooding a large area through lack of proper knowledge in shutting off the water. Furthermore, it is hoped that those in legislative authority will recognize the needs of the petroleum interests in California, and, as has been done in other States, provide laws protecting the producers from negligent, shortsighted, or criminally careless operators."

FAMOUS BURNING WELL ABANDONED.

From Mexico City comes the news of the abandonment of the famous well of Pearson & Sons, on the Mexico Gulf, the burning of which for weeks has made it world famous. The blaze is out at last, it having been extinguished by literally smothering it with torrents of mud, sand and water, using four great centrifugal pumps. Cortland Lawrence, who was employed by the Pearsons until recently in an official capacity, is in the city, and confirms the report of the abandonment, says the "Los Angeles Times." It is impossible to control it.

The well, or rather lake, as it may now be called, is the largest ever opened in the world. It has flowed 4,000,000 barrels of hot sulphur water daily of 160 deg. temperature, carrying with it some 25,000 barrels of oil. The fire started at the drilling into the oil sand, and the heavy gas pressure started the flow, opened great fissures in the ground, and the blaze was lighted from the boiler. The depth was about 1,800 feet. The flames shot up hundreds of feet in the air, and the nights were lighted like day. An engineer of the Mexican Central, in a report to his superiors, said that he wrote by night by the light of the burning well while seventeen miles away.

The water and oil has run off into the Mexican Gulf. Now, earthern reservoirs have been thrown up, and as much of the oil as possible is caught in these.

The fire was followed by the caving of the earth around the hole, until there is now a lake as large as six Los Angeles city blocks. Four acres fell in at one time. Soundings were taken at the edge in a boat, and they showed a depth of 360 feet. The phenomena is one never before seen, a freak of nature, that, were it located in a more accessible region, would be a nine days' wonder, visited by thousands from everywhere far and near. The site is nine miles south of Tampico, and is reached by steam launch.

There are two other wells in the immediate vicinity that yield between 2,000 and 3,000 barrels a day. There seems to be no doubt but that Pearsons have opened an immense oil field. Coupled with the great discoveries of the Mexican Petroleum at Ebano, farther north, there is abundant evidence that there is a great oil region extending along the Gulf coast.

Pearsons on Tehuantepec.

The Pearsons, Mr. Lawrence says, are burning their own oil on the Tehuantepec Railroad, which formerly imported its fuel from Texas. They have a production on the Isthmus of Tehuantepec of 5,000,000 barrels a day of 23-gravity petroleum, with asphalt base. The refinery at Minitalan is running at about half its capacity of 10,000 barrels a day. Refined oil is being marketed all over the republic, in competition with the American oil imported by the Waters-Pierce. A general sales agency has been established at Mexico City. Prices have come down 30 per cent.

In the State of Tobasco the Pearsons have discovered oil at depths from 180 to 1,800 feet. It has both asphalt and paraffin. On the southwest side of the Gulf of Campeche is found a light high grade, and on the northwest a heavy oil.

Near Tuxpan, Vera Cruz, three strings have gone to 3,000 feet and found a heavy oil. They will go deeper.

Fuber Has Great Wells.

The Oil Fields of Mexico, Ltd., of which Percy Fuber, of London, is president, has developed some very fine wells in the State of Vera Cruz. The oil is an asphalt and paraffine product of high gravity. The production is said to be between 5,000 and 10,000 barrels a day. Arrangements have been made with the Pearsons to market and refine it. They are laying an 85-mile, 6-inch pipe line to Tuxpan on the Mexican Gulf, and will run a narrow-gauge railroad to the same port to get in supplies.

The Hearst and Keene interests have drilled three wells in Eastern Chihuahua, and have found some oil, but not in sufficient quantities, it is believed, to be of much commercial value.

It is a notable fact that Mexico appeared for the first time in the oil statistics of the world in 1907, with a production of 1,000,000 barrels. Practically all of this came from the Mexican Petroleum property at Ebano. The output for this year will undoubtedly be more than double, at the least.

MEXICAN DEVELOPMENTS.

Mexico is witnessing the kind of trade competition which invariably results when a new local industry is being supported at the expense of a product that had been imported to meet the demand. We refer to the sword play between the Standard Oil Comany and the Mexican petroleum producers, which it is interesting to remark has already caused a heavy reduction in the price of oil and gasoline in the southern republic. Another indication that competition is keen is the marked falling off in the exports of crude oil from the United States to Mexico this year. During the eight months ending with August these exports totalled only 7,758,068 gallons, valued at $448,273, as against 14,122,102 gallons, valued at $719,742 in the same period last year. The exports of lubricating or heavy paraffin oil, however, show little change from last year, the total for the eight months being 629,630 gallons, valued at $132,823 in 1908, against 629,312 gallons, valued at $119,007 in 1907. The leading spirit in the petroleum industry in Mexico is the firm of S. Pearson & Son, which is operating a refinery at Manititlan that cost, it is understood, several millions of dollars. The manager, by the way, was formerly chief representative in Mexico of the Waters-Pierce Oil Co. (an important branch of the Standard Oil Co.) The prophecy is made that eventually the Standard Oil Co., by a gentlemen's agreement, or purchase, will again enjoy unstricted prosperity as a result of a complete monopoly in the Mexican petroleum trade.

THE NEW ALTAMONT-LIVERMORE OIL FIELDS

The new oil fields in the Altamont-Livermore district in Alameda County, about thirty miles from San Francisco, are attracting much attention. The interest is increasing. The demand for leases on oil ground is growing, and prices are steadily advancing with the progress of work on the different wells now drilling. That the district certainly has great prospective merit is a conclusion arrived at by practical, experienced oil men and operators after a careful investigation of the field.

The judgment of these men is being followed up by the investment of large sums of money, which is the best indication that there is something doing. A large portion of this money is to be placed in the field by the greatest of all oil companies, the Standard. Thousands of acres have been leased by this big concern at prices ranging from $1 per acre and up, and its demands have not yet been satisfied. It is understood that the Standard wants all the ground obtainable and is willing to pay a fair price for it on lease, with purchase clause.

The formation is such, according to experts and practical oil men who have been over the field pretty thoroughly, that an enormous oil field is being opened up. In the history of the oil fields of California no such activity has ever prevailed in any other section stimulated by the interest displayed by big financial and oil combinations. Other districts have boomed, but the booms were more of a mushroom growth—booms where speculators organized companies on any kind of land. They were not booms based upon such conditions as now prevail in these districts being opened now near Livermore at Altamont and Midway, and further to the north at Antioch.

Not only has the Standard secured thousands of acres of land on leases, but it is actively engaged in drilling wells at various points. Naturally, the first wells are being sunk at what are considered the best portions of the field, and the little station known as Altamont enjoys the distinction of being the favored place, for within a short distance of this point the Standard is operating two rigs, two or more miles distant from each other, the one a standard rig and the other a rotary. Other outfits are being assembled, and it is likely that, before the first of the year, operations will be started in several localities.

Standard Oil Company's Rotary Rig in Section 27. Well 400 Feet Deep.

The Standard has one well down about 400 feet, and a report has been circulated that there is already a showing of oil. Drilling operations are being started on another well in the immediate vicinity. The first well is located in section 27, being the northwest quarter, in T 2 S., R. 3 east. The other well is in the northeast quarter of section 20. This is about one-third of a mile from Altamont.

NICKERSON RANCH

Between these two wells A. F. Haraszthy, of San Francisco, has taken a lease on what is known as the Nickerson ranch, 317 acres of ground. One of the Standard wells is within 300 or 400 feet of the west line of the ranch, and the other about a mile from the southeast corner. Indicative of the demand for leases here is a concrete instance. Scarcely had the lease been secured before a considerable cash bonus was offered and refused. Other parties as well have been endeavoring to secure the ground, as, on account of its location between the Standard's operation, it is considered very desirable. Inasmuch as the Standard is taking advantage of any reasonable price to secure ground, it is believed that this is the company that especially desires it.

The Western Pacific Railroad, while grading through the property, discovered sea shell as well as the shale. There have also been found seepages, also oil and gas in the water wells on the ranch. Mr. Nickerson is said to have refused two flattering offers for a lease.

A company is to be organized to start operations as soon as possible, according to Mr. Haraszthy, who is financing the deal. If the Standard gets oil in either, well operations will go ahead on a more extensive scale than now planned. This tract has a plentiful supply of water on the ground, as it holds all water rights here.

In this same vicinity we are informed that Solinsky and Wehe, well-known attorneys of San Francisco, have secured several choice locations and have joined interests with Eastern capitalists to develop a portion of the ground at a no distant date. The leases require that operations be started within a comparatively short time.

MONTEREY SOUTHERN

The first people to enter the district and the ones who called the attention of the Standard Oil Company to it were Frank and W. H. Brophy and John D. Hoff, M. E., of San Francisco. Relying largely upon former geological reports, these people went there for individual investigation and found the field one that possessed great merit. They went over the field thoroughly, tracing the outcrop for a distance of twelve miles, and were sufficiently convinced of the possibilities that they immediately secured about 2,000 acres of land and organized the Monterey Southern Oil Company, which also owns oil lands in Monterey County.

The principal portion of the property is located about one and one-half miles east of the Standard's present operations and is completely surrounded by Standard property. A well was put down on this property and oil was found at a very shallow depth, too near the outcrop, however, to be a profitable one, although proving the existence of oil beyond a reasonable doubt. The oil seepages are very noticeable and oil springs are found as well, there being, in fact, every earmark of an oil field that had been, for some unaccountable reason, overlooked.

The dip of the anticline is said by Mr. Hoff to be from twenty to twenty-two degrees, and the strike of the belt sixty degrees west of north. This anticline apparently begins about four miles south of the Nickerson ranch on sections 14 and 15, in 3-3, the property of the Monterey Southern, and is easily traceable, as Mr. Hoff says, for a distance of eight miles in the opposite direction from this property, twelve miles in all. It is by no means probable that this is the extent of the belt, as authorities think it is practically the same formation as is found at Coalinga.

So far as the physical advantages of the district for the economical operation of property and marketing of oil is concerned, nothing could be asked for that does not exist.

Water is plentiful and can be secured in abundance at low cost, all that is necessary being to run pipe-lines to various properties for short distances only.

Railroad facilities are good, the Western and Southern Pacific roads both having lines through the prolific portion of the field.

Oil can be piped by gravity to tidewater or it can be piped by gravity as well to the Standard or Associated pipe-lines, which are only a few miles distant, or can be shipped by rail in either direction to all the markets of the country at comparatively small cost.

The quality of the oil is such that it will be worth from $1.50

to $2.00 per barrel at the wells, it being something like fifty-two gravity, as indicated by the product already found.

The climate is ideal. Labor is easily obtainable. In fact, everything seems to favor the industry, and especially as to market, for the center of population of California is right about the bay, within two hours' ride of the district.

Standard Oil Company's Standard Rig, Showing Nickerson Ranch.

GEOLOGY

In order to convey an idea of how geologists look upon the field we asked Mr. Hoff to give us a concise report on the formation and the following is what he says:

"The strike of the oil belt is sixty degrees west of north and running northwest and southeast. The dip of the shales on Section 15, Township 3 south, Range 3 east, M. D. M., is from twenty to twenty-two degrees.

"The formation is lower Miocene and is lifted up apparently by a cretaceous sandstone dyke, said dyke apparently resting on the metamorphic "Francisco Series," which is mostly covered by soil.

"One-half mile back from the outcrop of the oil sandstone is a stratum running northwesterly which contains infallible signs of oil, fossil osteria titan and other fossils of the same age. It is surprising that this field has been overlooked for so long.

"It is my opinion that oil will be developed here in commercial quantities.

"A number of seepages of high-grade oil are found along this anticline. The outcrops appear without a break for twelve miles, and the strata dip toward San Joaquin Valley.

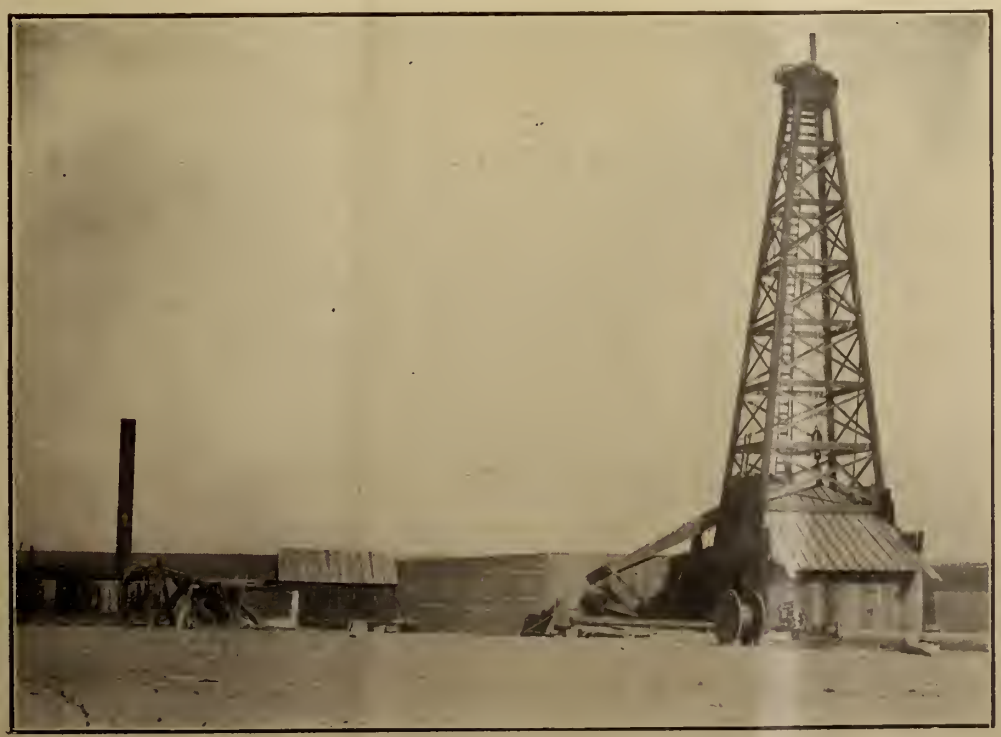
"JOHN D. HOFF, M. E."

THE DAISY

About eight miles further to the east the Daisy Oil Company, composed of those heavily interested in the Daisy Syndicate, of Goldfield, is putting down a well, a depth of about 1,300 feet having been reached already. It is expected that the oil sand will be encountered around 1,800 feet, possibly less. It would not be surprising, however, if oil were struck at a more shallow depth, although, as this is one of the pioneer wells it is next to impossible to correctly estimate the dip of the stratum. It is said that some oil has been found, and that there is sufficient gas present so that it will readily ignite. The Daisy controls a large amount of territory, having been among the first to recognize the opportunities in the district and the men, Frank Horton and associates, were not slow to take advantage of them to tie up all the land possible, in anticipation of what might be the results. They were not slow either in going ahead to prove up the ground, their activity being along the same lines that resulted in the making of the Daisy one of the best propositions in Goldfield.

A lease has been granted by the Daisy people to the San Joaquin Oil Company on favorable terms, and active operations are expected to be started as soon as the Daisy well approaches the oil sand. This company is controlled by Messrs. Horton and Wilson, who are also interested in the Daisy, and F. H. Lathrop, formerly of Goldfield.

One of the particular features of the oil business in general is the fact that those who have been engaged in mining for many yars are now turning to oil, and it is much to the credit of this particular field that suecessful mining men should be willing to spend thousands of dollars in doing pioneer work of development.



Daisy Oil Company's Drilling Outfit, Well Down 1,300 Feet Deep.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

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NOVEMBER, 1908

OIL MEN SHOULD ACT.

Some action should be taken by the oil men of the State looking towards framing a bill to carry out the suggestions of the Government report on the Coalinga field, for submission at the next session of the Legislature. This particularly concerns the water troubles and should be made to apply to operations throughout the State. Other matters of importance to oil producers should also be considered, such as the proposed bill for rate regulation of railroad transportation and to provide against any possibility of a shortage of tank cars.

We have noted recently that there are indications of coming difficulty in this particular feature of oil transportation. In the Coalinga district it was hinted that the Southern Pacific was unable to provide enough cars to supply the demand for transportation. This may have been merely a temporary condition, but such things are liable to result in gradual encroachment upon the right of shippers to demand sufficient transportation facilities. As long as it is known that the Southern Pacific has the cars in sufficient numbers at the present time it is well enough for shippers to insist that they be provided at all times in order that conditions may not return to the state in which they were before the Garfield Commission placed the railroads again into the business of transporting oil as common carriers.

It will at all times be well to keep an eye open on the Southern Pacific and permit no single action that, by reason of neglect on the part of shippers, may gradually grow into a chronic condition.

CALIFORNIA ASPHALT.

On another page will be found a brief history of asphalt production in California, prepared for the "California Derrick" by Mr. F. H. Dunham, who has been intimately connected with this feature of petroleum production since the first plant was built twenty-one years ago.

It appears that, before California asphalt can expect to enter into successful competition with the Trinidad product in the Eastern States, some changes must be made in the methods of manufacture. Mr. Dunham says: "There is no concern manufacturing asphaltum that is using the most economical methods of producing asphalt cement." He also says: "It is apparent that grave faults still exist in the material manufactured by present methods, the main difficulty being to secure uniform penetration with an absolute purity of material."

He suggests that there should be an organization for the purpose of putting into effect the improvements in methods, when he hopes that California material will be placed in Eastern cities in direct competition with the Trinidad products.

It is understood that an active movement has been started with the purpose of asking Congress to place a duty on imported asphalt in order to give the California product a chance in the eastern portion of the country. If California producers had done their utmost to reduce the cost of the product and to give it absolute uniformity, and had then been unsuccessful in meeting the competition, a different light would be placed upon the subject and they could then come before Congress with a plea for protection that would undoubtedly be granted. It seems, however, that it is largely the fault of the manufacturers themselves that there is not a larger sale in Eastern cities.

We believe it is generally conceded that, even as it is now, the California product is of a better quality than the Trinidad but, if it can be improved and at the same time manufactured more cheaply, we believe the markets of the country would respond readily, and in a comparatively short time material inroads could be made upon importations.

It is suggested that the present production could easily be doubled in a comparatively short space of time, which, of course, means that the market is open to conviction. Those who buy asphalt naturally want the best that can be found, and are willing to pay in proportion, and, eventually, no amount of graft or pull could prevent the excellent material such as can be produced in California being kept out of the market.

From a perusal of Mr. Dunham's article it would seem that a market can be found when California's producers are ready to fill its demands, with or without a duty on the imported product.

MORE REFINERIES NEEDED.

The development of the oil fields of California during the last few years has been phenomenal. Prior to the year 1900, California oil was a minor factor in the mineral resources of the United States. But by 1906 it had attained first place in the rank of oil-producing States and is today a close second to Illinois, with a production of 40,000,000 barrels per annum—one-sixth of the total production of the world.

As is natural in a new industry, speculation ran rife. The days of '49 were repeated in the oil industry. The tales of fortunes made overnight led to the most promiscuous wild-catting, and many hundreds of thousands, if not millions, of dollars were sunk in dry holes.

But when a new industry develops, and conditions become more settled, manufacturing gradually draws attention to itself, and people come to consider whether it is not more profitable, more safe, and more noble to fashion the crude products of the earth into the myriad useful forms than to penetrate into the unknown and unknowable fastnesses of the earth in the search of treasure.

This year in California 40,000,000 barrels of crude oil will be sold. Three-fourths of that quantity will be used as fuel, while only one-fourth will be refined. It is true that a large percentage of our crude would not repay the cost of refining, yet many thousands of barrels of refinable oil are daily mixed with heavy fuel oil in order to more easily transport the latter by pipe line. This is not only a waste, but an injury, to the oil producer and the State. If the light oils were refined, the production of heavy oils would be stimulated by just that amount which was taken off to make refined oils. The production of light oils would at the same time be encouraged by the greater demand. The whole State would benefit by the increased quantity and value of refined oils, which, shipped to foreign shores, would bring back a golden harvest to be distributed among the people of the State.

The argument might be made that the use of kerosene is declining, owing to the increased use of gas and electricity for lighting. But statistics show that in America and Europe the consumption of illuminating oil is increasing faster than the population, while in less civilized countries its use is constantly being extended. India, with a population of nearly 300,000,000—about one-sixth of the human race—imports over 10,000,000 gallons of kerosene monthly. This means that each person uses only one small teacupful per month, or less than half a gallon per year. Each family of five would use less than two and one-half gallons annually!

Besides the Indian trade, China, Japan, Australia, New Zealand, the Philippines, Hawaii, Alaska, Canada, and western South America offer an ever-increasing market for California oils. All these markets are tributary to California, and necessarily depend upon our nation for these imports. More than this, California oils are of a better grade than those obtainable in any other oil field (excepting the eastern United States), and consequently can displace the inferior oils of other nations.

The demand for gasoline and benzine, which have long been used for burning in stoves and gas engines, for making paints and varnishes, and for cleansing garments, far exceeds the supply. So insistent has the demand for larger quantities become that all stove manufacturers, gas engine builders, and others are experimenting with the use of lower-grade products; and with evident success. In Europe, Pratt's motor spirit, universally used in automobiles, has a gravity of 55° Be'—is, in fact, a high-grade engine distillate.

Considering these features of the trade, the future trend of refining methods can with certainty be predicted. The oil will be handled so that a high-grade gasoline for varnish makers, who cannot use "heavy" gasoline, will be produced. The heavy gasoline and benzine will be mixed with the engine distillate, which in turn will be made heavier, thus reducing the percentage of coal oil obtainable from the crude. In this manner a large volume of oil suitable for stoves and internal-combustion engines will be obtained, yielding a larger profit to the refiner and a sure and abundant supply to the consumer.

California offers peculiar attractions to the refiner. With practically inexhaustible oil fields, pipe lines to the seaboard, and an ever-increasing Oriental market, what more could the refiner ask? Competition with the Standard Oil Company being eliminated—for the Standard does not now supply oil enough to meet the demand—there surely should be found those who are enterprising enough to embark in this alluring enterprise and establish independent refineries at strategical and convenient points. The market is open and only awaits the supply.

TRUST COMPETITION.

Competition—cruel, heartless, unrelenting competition—has existed since the world began, and still exists. It is the struggle for existence which has confronted and still confronts every earth-born creature. The pestilent weed of the garden most strikingly illustrates the indomitable strength and steadfastness of purpose that enables it to live in the presence of its enemies.

So it is in the business world. Every business man, from the peanut vender to the trust magnate, is engaged in a mighty struggle for dollars, and power, and continuance. No matter how small, nor yet how vast, the enterprise, the elemental struggle for the survival of the fittest is there. The corner grocery competes with the magnificent department store; the country merchant with the great mail-order house. And yet they live even as the weed in the garden, or as the fly on the wall beside the spider. Should the fly bow down its head—wait with folded wings till the lusty spider rend her? Should the small business man sit idly by, or lie supinely on his back, waiting to be swallowed by the trust?

In the small business, eternal vigilance is the price of success; the same is no less true of the giant monopoly. There is no business, whether small or great, but has some weak spot in it. It is the duty of the small dealer to find the weak spot in the trust's methods and to capitalize it. No less is it his duty to strengthen his own position.

In every department of commerce there have been some strong enough to cope with the giant trusts and take advantage of the high prices created by them to reap enormous profits. James Ogilvie has for years successfully marketed his Bibles in the face of the "Bible Trust." Tom Hisgen has spread his oil business over the State of Massachusetts in the face of the Oil Trust. But before all others stands out the name of one—a man—Thomas W. Lawson, of Boston—who has defeated the trust of trusts in its own pet field—the stock market of Wall Street. Did he hold back and say: "I fear," "I resign"? Not he! But, beset by thugs, his life threatened, his character maligned, he has withstood the Titian monopoly, has bearded the lion in his den, and come forth with the lion's claws in his wampum belt.

The methods these men have used are plain, and fair, and available today to every one. No secret power, no great financial backing, no pull, no big stick, has been necessary. In business, honest goods, honestly represented, have always won a place. Often they have entirely replaced trust-made goods, sold by unfair methods at unfair prices. At last the retailer and consumer, beaten with many stripes, have come to realize that a temporary reduction in price which drives competitors to other markets or to bankruptcy means an exhorbitant price in the future. The consumer is the one who feels the stroke of the knout most keenly and whose protest has a beneficent and wholesome effect upon the retail dealer and upon the trust.

Let the independent dealer put out goods of a quality equal to those of the trust and he will have no difficulty in selling them. The sentiment of the people against trust-made goods will assure him of a sufficient market.

In many ways the small dealer actually benefits by the presence of the trust. The wide advertising carried on by the trust relieves him of the necessity and expense of an advertising campaign. Of course, specific and local advertising cannot be neglected. The trust introduces new goods, creates a demand for them, and the wise small dealer reaps his share of the golden harvest.

There is less liability of price-cutting when there is only one big firm to compete with than if there are several large concerns in the field. The trust may cut prices in a restricted area and raise them in another, thus keeping its net profit constant. The small competitor must meet the cut in price, at the same time reaching out into the district in which prices have been advanced. Cut-throat competition is rapidly becoming a thing of the past; men are in business to make money, and experience has shown that excessive price cutting has never brought the returns expected.

One of the favorite methods employed by the trust has been the refusal to supply certain goods to a customer unless he agreed to purchase all of his supplies from it. For example, the Oil Trust might refuse to sell coal oil to a dealer who handled axle grease made by an independent manufacturer. This form of discrimination is very difficult to overcome on account of the many lines of business controlled by the trust; but it is not impossible.

Another method much used by the trust in the past has been the familiar railroad rebate, secured in various ways, but now generally abandoned. The advantage gained in this manner has generally been overestimated, so that a business which could not succeed in spite of rebates deserved to go under. In the oil business, failure can most generally be laid to bad management, or inability to produce goods of high quality, rather than to interference on the part of the Standard Oil Company. Many oil refineries have been started by parties whose expectation (realized) was to make money from the promotion thereof, not caring whether the stockholders made any money or not. The legitimate business of refining should not be judged from such examples, nor should the Standard Oil Company be blamed for failures in no wise attributable to it.

THE MINING BUREAU.

Some severe criticism has been directed of late against the State Mining Bureau and Mr. Lewis E. Aubury, accusing him of conducting the bureau rather as a part of the political machine that holds the State in its grasp than in the interests of the mining industry.

It is undoubtedly true that the State fails to provide sufficient funds for the proper conduct of the bureau, and it is certain that those interested in the welfare of the mining industry could, by concerted effort, prevail upon the Legislature to appropriate a larger amount of money to be devoted to this department, which, indeed, is an important one.

Mr. Aubury should not be blamed for shortcomings occasioned by conditions over which he has no control. If it is true that too much work has been done by the bureau outside the presumed limits of its jurisdiction, it is assuredly wise that Mr. Aubury's attention should be called to the fact, as every cent now appropriated by the State should be spent in the proper manner, and the time of every one connected with the bureau should be devoted exclusively to the objects for which it was created.

It is a well-known fact that the oil industry has not been given the attention it deserves. No important documents have been issued for several years. It is understood that no one is kept in the field to gather independent data and that what information is given out is taken, not from independent, first-hand investigation, but from sources which have no reason to give information for public benefit.

At this particular time there is a crying need for reliable, independent information, and there is no method by which this can be obtained in a complete manner other than through the State Mining Bureau. There is need of a publication covering this industry thoroughly, and we believe that, even with the funds at hand, something could be done in this direction by the bureau.

We believe that data could be gathered for an official bulletin in a very short time; but if its publication is postponed one, two, or three years from date, such data would be of no benefit. Government statistics are nearly always published at so late a date that the information is of little benefit. The State could gather, compile, and publish the statistics in six months' time or less, if energetic effort was put forth.

The real industry should be given the attention it deserves, and the time and money spent in skimming the surface, investigating the froth, and making a loud noise concerning really immaterial subjects could well be devoted to substantial purposes. The fungus growth on the oil industry is infinitesimal as compared with the real thing, and we believe greater credit would accrue to those who have these things in hand if the bureau's efforts were directed to gathering information of this great resource of California, and not more especially to those things which California's laws are designed to prevent and which can be taken advantage of by grieved individuals.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

THE COALINGA DISTRICT IS PRODUCING MORE OIL TO-DAY THAN ANY OTHER DISTRICT IN CALIFORNIA; MORE THAN ANY OTHER DISTRICT IN THE UNITED STATES, AND MORE THAN ANY OTHER DISTRICT OF SIMILAR SIZE IN THE WORLD.

Coalinga had, on October 1:
420 producing wells.
84 wells drilling.
10 wells being deepened.

42 rigs were erected in September.
590 rigs in the field.

2,000 barrels in storage on east side.
18,200 barrels in storage on west side.

995,000 barrels shipped in September, 643,000 from east side and 352,200 barrels from west side, a gain of 18,050 barrels over August.

Wonderful activity prevails in this field. Where two years ago there was only foxtail grass and an occasional band of sheep, lazily feeding, watched by a French-Basque, today is a scene of great activity; something like 200 new derricks have taken the place of the pastoral scene, and the dollars in revenue have multiplied. The sheep graze only a little further away. The oil man from Eastern fields, he with life and vim, soon takes on the spirit of the field, and when business calls him away, leaves the scene with regret. This is experience picked up by all the live ones that grace our little oil city.

There were 84 wells drilling on September 30th, on the east side and west side; 10 wells that were being deepened, and 420 wells producing. There were 42 new rigs built during the month. On October 1st there were 590 rigs in the field; quite a number of new rigs have been built since then. At midnight of September 30th there were only 2,000 barrels of oil unshipped on the east side, with 18,200 barrels still on hand on the west side, or 20,200 barrels in temporary stock. There were shipped during the month 643,300 barrels from the east side and 352,200 barrels from the west side, a total for the month of 995,500. The production for September was a gain of 18,050 barrels over the previous month. The total production for September was 998,500 barrels.

The British Consolidated Oil Corporation, Limited, has closed the deal on three of the five properties that were considered as desirable, these being the 40 acres on Section 12-20-14, known as the P. M. D. & O. lease; 40 acres on Section 12-19-15, known as the California Diamond Oil Company, and 160 acres on Section 26-19-15, known as the California Monarch Oil Company. Sir Thomas A. Salt, Baron, the vice-president of the British company, examined the properties in company with Arthur W. Eastlake, M. E. Sir Thomas stated that the properties were one-half better than represented by the vendor, and he so reported. The remaining two pieces, 160 acres in Section 31-19-15, were not taken over on account of condition of ownership in the companies preventing the British Consolidated from assuming full management and control. They were not turned down, Sir Thomas says, on any other account. The investigation was thorough. Mr. Eastlake, an experienced engineer, having devoted much time to the California Oilfields, Limited, the past few years, and Sir Thomas Salt, a man of business and experience in handling large properties, devoted their energies to investigation of the quality of the land and the condition of control. Sir Thomas proved to be a man of keen judgment, clear in his reasoning, logical and just, a man of easy approach, making many friends while here.

From estimates made by the British Consolidated Oil Corporation, Limited, it would appear that 5½ cents per barrel will deliver the oil from the bottom of the well to the purchasing company's tanks. That cost can be cut to 4 cents per barrel by careful management with the coming improvements in well appliances and more convenient method of tanking. The experience gained is teaching the oil men of this field.

The Kern Trading and Oil Company, Section 11-19-15, is building a complete camp, now nearing completion. Section 35-19-15 has been the headquarters for the east side, all material being delivered there by the big freighters. It is reported that Charles Alexander will have charge of the east side camp. The company will soon have a camp on Section 3-19-15, material now going upon that section.

The Coalinga Hub Oil Company, Section 22-21-15, has out an attractive prospectus, gotten up by Walter M. Dunham, containing some valuable data on the oil industry. We are informed that the company will soon have material on the ground for a standard rig and development work will follow.

The Turner Oil Company, Section 2-20-15, has levied an assessment of 5 cents per share, delinquent November 17th. The management contemplates further development work. The results in the W. K. Oil Company, same section, and the present indications of the Coalinga Mohawk Oil Company, Section 12-20-15, have stimulated the company to action.

The Standard Oil Company, Section 28-19-15, has improved several of the old wells on the old Hanford property, by drilling them deeper. Superintendent Jim Pierce has the property looking like all of the Standard holdings, "fit as a fiddle."

The California Oilfields, Limited, is doing considerable drilling on Section 27-19-15, and is deepening some of the old wells on Section 34-19-15. Well No. 3 is said to be doing about 1,200 barrels per day of 60-cent oil.

The Golden Crest Oil Company, Section 12-22-15, is about 900 feet deep with 12½-inch casing. The formation is looking fine and drilling is good. This well is being watched closely, as it is expected to prove up quite a belt of country.

The American Petroleum Company, Section 30-20-15, is showing much activity, new rigs and new buildings. Well No. 1 is still showing up fine. On Section 18-20-15 the buildings for a commodious camp are well under way, rigs are going up, and much material is now upon the ground.

The British Consolidated Oil Corporation, Limited, Section 26-19-15, have completed the office building. Cashier W. H. Fraser will have the American office on this property, where, with his assistants, he will conduct the business of the company.

The T. C. Oil Company (Wm. Graham), Section 2-19-15, has well No. 5 into the oil sand and conditions are favorable for a big well.

The Pluto Oil Company, Section 19-25-19, Tom Whaley, superintendent, is building a standard rig and will soon have the camp completed, when work of spudding in well No. 1 will be commenced.

Senator Cartright and associates have material on the ground for rig for well No. 1 on their holdings on Section 6-21-15, which will soon be erected.

The ern Trading and Oil Company, Section 25-20-14, has a complete rig in the southeast corner, offsetting the big well of the American Petroleum on Section 30-20-15, also a complete standard rig in the northeast corner.

The Commercial Petroleum Company, Section 31-19-15, M. L. Woy, manager, has completed the rebuilding of rig for well No. 6, which was destroyed by fire.

The Cantua Oil Company, Section 34-17-14, is over 975 feet deep, with 12½-inch casing, going nicely. Superintendent McCrary will carry the 12½ as far as possible.

The B. & B. Oil Company, Section 12-20-14, has well No. 5 over 500 feet deep, with 12½-inch casing.

The Wabash Oil Company, Section 24-20-14, has material on the ground for well No. 15, and the derrick will be built this week.

The S. W. & B. Oil Company, Section 6-20-15, has rig for well No. 5 about completed and will rig up next week.

W. S. Boggs, general manager of the Imperial Oil Company, visited the field and the company's property last week.

John A. Bunting was in the field last Sunday, taking in his interests and viewing the development of the field from his big auto.

KERN RIVER.

The production of this district, as near as can be learned, is in the neighborhood of 30,000 barrels daily, while the shipments amount to about 33,000 barrels; the difference coming from the large amount stored. This will bring the production of the field, not including storage, to 10,800,000 barrels for the year. Other estimates place the amount at 14,000,000, including the storage oil which is shipped.

Thus far, the Santa Fe has not reached oil on the P. D. lease, although a depth of 2,700 feet has been reached. The hole is to

be sent down as far as machinery will put it. Only one other well was ever sunk to this depth, the Grace, which went into salt water at about 3,2000 feet, passing through some good sand, however.

The California Kern will begin two new wells during the coming month. The first well is averaging from sixty to seventy barrels a day, after nearly three months of production.

The Oakland Company, which has secured Petroleum Center on section 24, expects to start drilling in the near future. There are four wells on the property which have heen ahandoned.

Two rigs are heing erected on the Sesnon's property. Two wells are being drilled and nine are on the pump. The property consists of thirty-four acres under lease.

Three wells are being sunk on the Jastro and St. Clair lease, one of which is said to be of about 100-harrel capacity.

Plans are afoot to organize all the independent producers of the State into one central body for mutual benefit and strength. It is proposed to consolidate all present organizations and endeavor to organize all districts that are not at present organized. A meeting has heen called at Bakersfield, to he held December 10th. The success of Independent Oil Producer's agency has become apparent to other producers who are now believed to be willing to join. Under the present management of the institution very little complaint has been heard, and there is no reason to expect that conditions cannot continue to steadily improve with more united effort, thus creating additional strength to dictate prices to buyers.

SUNSET—MIDWAY—McKITTRICK.

So far as activity is concerned, this is the premier section of California. It is not yet the largest producing portion of the State, but it promises soon to be at least third, and hefore many years have passed, if present conditions and successful operations continue, it will give the leaders a close run for first place.

The feature of the activity is the demand for oil territory, and large bonuses for the acquirement of leases are asked and received. A large amount of new work has been started within the past two

Sunset Center. Well Showing Earthen Reservoir Filled with Oil.

months and a still larger amount is anticipated during the next sixty days.

The Loma Vista is the latest development in the Sunset. Saturday, November 14th, saw the well a real gusher, the oil being propelled into the air a distance of 100 feet ahove the derriek. The second sands were encountered in this well at a depth of about 1,300 feet. It is expected that the well will settle down to a handsome production. The property consists of forty acres in section 1, taken over recently by H. W. Thomas and associates of Fresno from the Kern Sunset Oil & Development Company at a bonus of $600 per acre.

In section 6, to the east, the La Blanc Oil Company, composed of John La Blanc, W. V. Harrington, Mark E. Davis, J. C. Downey, Ben M. Howe, James Keller and Arthur I. Machen, of Oakland, has its well down 440 feet. The work was suspended for a few days, owing to non-arrival of easing, but by this time has undoubtedly started up again. The company has been equipped with telephones during the past few days.

In the same section the Lady Washington, also a new corporation, is drilling the tract formerly known as the Haviland Oil Company's property, a triangular forty with the section line as its southern boundary. A depth of between 500 and 600 feet has already been reached. The oil is expected at around 1,500 feet. The equipment on the property is of ample capacity to continue still further down. The nature of the ground, however, in this section, is such as to warrant extremely close calculation.

On The Yellowstone, in section 7, to the south of the Western Consolidated lease, is in brown shale, with much gas, at about 1,200 feet, indicating favorable prospects of reaching the oil sand in two or three hundred feet.

The Monarch, on section 7, is drilling two new wells, the one down about 700 feet and the other approximately 1000 feet. The first well is pumping fuel oil for home consumption.

The Topaz, on the S. E. ¼ of 12-11-24, is said to be producing about 100 barrels daily of light oil.

W. B. Moore, a pioneer in the Sunset field, has leased the property of the Golden West Company in section 12, and expects to start new work shortly. The tract already has one well.

Frank Mattson, superintendent of the Safe and B. H. C. Oil Companies, on section 25, has started a new well on the Safe and will start one this week on the B. H. C.

The Northern, on the northeast quarter of the northeast quarter of section 12-11-24, is drilling on well No. 1. The rig is up for No. 4.

The Anaconda, on the south half of the northeast quarter of section 12-11-24, is drilling on No. 9, and has a rig up on No. 5.

The Monte Cristo, on section 32, has just brought in a well with an estimated capacity of 500 barrels. This property was formerly known as the Pittsburg. The oil is above eighteen degrees. Being a considerable distance from any other wells, it proves up a considerable amount of new territory. The nearest well is on the Stratton, in the same section and to the west. Less than a year ago the Monte Cristo purchased the property from the Pittsburg Oil Company, paying $10,000, and now it is estimated to be worth over $500,000. The company owns the entire section, with the exception of forty acres belonging to the Stratton Oil Company in the southwest corner.

The Santa Fe Railroad is about to erect two 37,500 barrel tanks, and two 4,000-barrel settling tanks are already in process of construction on section 9.

MIDWAY.

Northwest of Sunset is Midway, and this district is the scene of greater activity than ever. Practically the same general conditions prevail here as at Sunset, as it is considered to he in the same belt, although all the territory between has not been absolutely proved.

The first dividend of the Royalty Oil Company was paid on the tenth, and this from operations covering a period of less than ninety days, and so Midway holds the record for quick results attained. The dividend was small, $200, but is expected to be largely increased immediately. In the meantime, the stock has been listed on the San Francisco exchange and cannot be bought at $1.75 per share, the price bid.

The lease recently granted on one-quarter of section 24 to McCray and O'Donnell and organized under the name of the Cousin's Oil Company, is to be developed immediately. Two wells are to be started and the machinery will be in place at the earliest possible moment.

The Midway Crude, on section 31-31-23, is estimated at about 400 barrels. The well has not been perforated and will not be until a sure supply of water is available. The tar sand was found at 968 feet. At 1010 feet, oil sand was entered, and from that point to 1408, except forty feet of clay, the drill was in brown shale, rich in oil or oil sand, and the well was finished with the 9⅝.

The Brockton, on the northeast quarter of 23-32-23, has succeeded in shutting off the water encountered in drilling, and is said to have a good well.

The Paraffine is down about 800 feet with 11¾ easing in No. 2. No. 1, which was reduced from a 300-barrel producer to sixty by a slide which carried away the lower section of the casing, is to be restored.

The Pierpont, A. B. Canfield, on section 25, has over 100 feet of sand at a depth of 1400 feet.

Four cars of water a day are being delivered at Siding No. 2 by the Southern Pacific, and the distributing system is working excellently. The Stratton system is also doing well, although the new compressor is not yet in commission.

The Knob Hill will start two new strings at once. It is not yet known what was the extent of the sensational strike made by this company, but it was sufficient to cause increased development. Lack of water kept this lease idle for weeks.

McKITTRICK.

The Templor Ranch Oil Company is reported as producing 200 barrels of oil daily from its wells now on the pump. A boiler house, to contain three boilers, is being erected, and two air-compressors are being installed. The building is 30x60. Sixty barrels are furnished daily to three operators.

The State Oil Company is reported to be producing close to 10,000 barrels monthly from its four wells; the new one, just brought in, having the average capacity of the other wells, about eighty barrels daily.

A new well has just been completed on the Olig Crude in the northeast portion of section 24. The company already had several

producers, and from them has paid dividends for a long time.

It is stated that the San Francisco and McKittrick, during the depression, was offered to the Southern Pacific Railroad Company for $250,000, at the rate of $5 a share. To-day it is paying eight per cent on $2 a share, the price of the last sales, and in a short time will be able to pay nearly twice that much.

The Associated's rotary is between 1300 and 1400 on section 31, and is in brown shale. Like conditions exist in the Springfield well, which is about 1400.

M. Z. Elliott has recently started drilling in the extreme southeast of 31. Mr. Elliott obtains his water and oil from the Templor Ranch Company, mixing and pumping the two together through a lately laid pipe line.

F. J. Kimball has spudded in No. 3 near the middle of the north line of section 3. No. 1 has been cemented off and No. 2 is drilling.

The old time Sea Breeze and U. S. Companies are about to resume work on section 6, which has been idle for years. The two companies lie side by side and are very closely related otherwise, the principal ownership and the management of both being in the hands of Bakersfield parties.

The Sea Breeze has one well, the U. S. two. In all three the oil stands within twenty-five or thirty feet of the surface, and so far as can be determined, they are capable of producing about 100 barrels each. They will be put on the pump, and other wells will be drilled. The territory is about 1000 feet.

SANTA MARIA.

Twenty drilling rigs are at work in as many new wells in the eastern extension of the Santa Maria field, in what is known as the Cat Canyon and Foxen territory. These rigs are the Palmer Oil Co., No. 2; the Foxen Oil Co., pioneers of this part of the field; the Sisquoc, Ideal, Los Alamos Petroleum, New Pennsylvania, Dome, Old Mission, Henderson, Brooks, Stendell, Union (five), General, Associated, and Kernel Companies, and one on the west tract.

As these operations cover a territory from five to eight miles in extent and the territory is considered almost wholly proven by the Stendell and Palmer Companies, the outlook for a greatly increased production in the Santa Maria field looks very bright.

In the older part of the field, production and development go forward with settled regularity. New wells are "coming in" at frequent intervals, the most prominent of which are two on the Dome, one on the Newlove, Union, Western Union and Pinal. The Western Union well is south and east of its first group of wells, adding to the extent of proved territory on their large lease (10,000 acres). One of the Dome's new ones is flowing steadily, which augurs well for the longevity of the older part of the field.

A movement has begun in the field to bring all producers not identified with the big selling companies into an independent association, similar to that successfully organized in the Kern County fields; in fact, the Bakersfield independents, through Secretary Dallas, of their association, are responsible for the movement in the Santa Maria district. The purpose is to give producers power to control selling prices of oil, and to fix a minimum price that will prevail in making new contracts when the present contracts have expired.

A new method of drilling is attracting much attention in the field, especially where it is employed by the Ideal, Williams and Palmer Companies. It is a combination of the Standard rig and rotary, an adaptation of the best features of both. The standard rig is used, with hydraulic attachment borrowed from the rotary rig, which forces a soft mud into the hole down to the bottom of the casing and up the outside. The mud forms a plastering on the walls of the hole which is valuable, especially in sand and other loose formations that are liable to cave. Where employed, the method has been pronounced successful, and it is the general belief of oil men that it has solved the sand problem. Black adobe is used, the blacker and stickier, the better.

The Associated Oil Company is about ready to make another try at pumping the oil from the Palmer well, through the company's new pipe-line. It was found necessary to install heating stations on the line, and these will shortly be given a trial.

LOS ANGELES.

Efforts are being made to organize the Southern producers into an agency similar to those in existence in the Kern River and Coalinga fields. A number of meetings have been held, which were attended by representatives from the Kern River and Coalinga agencies, as well as prominent producers from the Los Angeles, Fullerton, and Whittier fields. The purpose is to organize on a basis similar to the agencies already in existence in the northern fields and to co-operate with them in every way advantageous to the oil man.

A number of attempts in years gone by have been made to organize the producers of the old Los Angeles city field, but they always met with failure owing to the peculiar conditions existing here. The Los Angeles field, as is well known, is a "town lot" proposition pure and simple. The productive area consists of a narrow strip extending for about three miles through a thickly populated section of the city. There are hundreds of wells drilled on almost as many town lots, with as many different owners. All the wells are small producers, the total output for the entire field being only between 40,000 and 50,000 barrels per month. Some of the individual producers, it can be seen, have a very small production. No pipe line connects the field with the markets, and all the oil is marketed by tank wagons. There is practically no storage in the field and the oil is sold almost as rapidly as it is produced. From the above it can readily be seen how individual interests would naturally conflict and how difficult it would be for the producers to get together. The result of this is that there really is no price on the product, each producer making his own price, and in this way everybody cutting everybody else's throat. The price here ranges from 70 cents to 90 cents per barrel delivered, as against $1.00 to $1.10 in the San Francisco market.

Drilling in the Los Angeles field is at present practically impossible, owing to the restrictions placed upon the operators by the city authorities. There is at present but one well being drilled in the old field—by the Union Consolidated Oil Company, on Ocean View Avenue. This is in the nature of a test well to ascertain if there is a second sand. All the wells in this neighborhood are shallow, ranging from 800 to 1,200 feet. The intention is to drill this hole at least 1,800 feet. This location is in the western limits of the city field, and if oil is found in the lower stratum, there no doubt will be a revival of development work toward the west, as for some time prominent oil men have insisted that the Salt Lake field is simply a continuation of the old city field. In fact, developments in the eastern end of the Salt Lake field have extended to a point where only about four miles, possibly less, intervene. In the latter field the Associated has been for some time extending its development work toward the east and has been securing from 75 to 100 barrel wells at a depth of about 1,800 feet. Work is still going on at this point and future developments are watched with interest.

SALT LAKE.

The Salt Lake field proper is probably as lively a field as there is at present in the State. There are no less than forty strings of tools running, and Sherman Junction seems to be the center of activity. The field is rapidly being developed toward the west. The drilling is going on within the limits of the little town of Sherman. Beverly, the beautiful, is surrounded by rigs and drilling wells. Palms is feeling its oats because considerable land has been leased in that neighborhood for oil purposes and drilling is to be commenced shortly. Sawtelle has the fever, and land values in that town and vicinity have jumped amazingly since work on a test well near there was commenced several months ago. Even Santa Monica has hopes of becoming an oil town and a tract of land within the town limits has been leased for oil purposes and a company is making preparations to drill.

The Associated Oil Company, being the pioneer in the Salt Lake district, of course has most of the land leased or purchased, and this company alone is operating 12 or 15 drilling rigs. The rotary rig seems to have been proved a success in some sections of this field, and the Associated is operating a number of them. Several other companies also are operating rotaries.

The Pacific Light & Power Company, one of the operating companies in this field, has just secured 116 acres near Palms and operations will shortly be commenced. Gable & McDonald are drilling a well on a 680-acre tract near Beverly. The land is surrounded by rigs of the Associated and is considered gilt-edged property. The test well being drilled by Clampett Bros. & Co. near Sawtelle is down about 2,000 feet. The sand has not been struck, but drilling will be continued.

Marketing conditions here are favorable, and the output—about 15,000 barrels per day—is taken care of as rapidly as produced. About 125,000 barrels per month are being shipped from San Pedro and Redondo by the Union and Associated to northern points. The balance of the output is taken care of by the southern markets. The Union's pipe line from the field to its city storage tanks has not yet been operated, owing to a dispute over a small section of the right of way. Negotiations are now under way, it is said, by the Associated, to build a pipe line from the field to Redondo from which point this company ships its oil. At present it is necessary to haul it by rail, which is a much more expensive process.

FULLERTON.

One of the big oil districts of this Coast some day will be the Fullerton field. No excitement attends development work here, and yet it is one of the busiest fields in the State. One hears very little about new companies starting up, because there is very little chance for a new concern to get into the field, all the available land having been bought or leased years ago by the companies already established. These are all strong concerns and are steadily drilling and securing big results. Some of the wells start off at from 1,500 to 2,000 barrels a day. Many of them settle down to good 500-barrel steady producers. Territory here is deep, and finishing a well is a long-time proposition. Therefore production is not rapidly increased, which, by the way, is a good thing, considering the size of the wells.

The Olinda Land Company, which several years ago spent about $250,000 prospecting for oil on its land, without results, has decided to try again and is at present drilling about three-quarters

of a mile southwest from the scene of its former operations. C. V. Hall has practically proven the territory in this vicinity and is reported to have brought in a good well near here recently.

All the oil in this field, with the exception of the Santa Fe's production, is marketed by the Union Oil Company, which has a pipe line connecting this field with the Los Angeles markets. The daily output of the field is about 10,000 barrels. It is all marketed as soon as produced, and none is going into storage.

WHITTIER.

The Central Oil Company and the Murphy Oil Company own the largest tracts of land and are the largest operators in the district. Their land is also probably the most prolific, but 100-barrel wells are scarce on either of these properties. There are altogether about ten operating concerns here, and they own most of the productive area. The total output for the field is about 2,700 barrels per day. Much of this is marketed by the Union Oil Company, but the Central and Murphy Companies each markets its own oil, the latter using much of its product in its Los Angeles refinery.

MONTEREY COUNTY.

A shipment of fifteen carloads of drilling machinery was shipped into Bradley the first of the month by the Standard Oil Company to be used on the Sargent ranch of 33,000 acres, the oil rights of which were recently bought by the Standard for a reported consideration of $8 per acre.

In the well being drilled by E. L. Doheney, of Los Angeles, a depth of 1,500 feet has been reached, with good indications. This is at San Ardo, in township 22, range 10.

The surface indications and the activity of the Standard have caused somewhat of a flurry and many oil men are securing land.

OIL AT OROSI.

VISALIA, November 12.—There is excitement tonight at Orosi, fifteen miles north of this city, over the prospect of an oil boom. Selma and Bakersfield capitalists today commenced putting down an oil well at Stokes Mountain, three miles southeast of that place. Eastern experts have declared the prospects for oil equally as good as those in the Bakersfield and Coalinga fields. The sinking of wells 150 feet deep for irrigation purposes disclosed oil on top of the water.

HALF MOON BAY OIL FIELDS.

A district concerning which little has been said of late again promises to be a center of attraction. This is the Half Moon Bay field, about forty miles south of San Francisco, on the Peninsula.

Several years ago a number of wells were drilled, and it is understood that there are now nine or ten wells that are producers, but owing to lack of transportation facilities these wells have never made an effort at production as the cost of hauling the oil to market is prohibitive. At this time the Ocean Shore Railroad is building its road from San Francisco, and the track is constructed to within two miles of the wells. In the course of the next month or two the road will have been built through the fields, thus affording cheap transportation.

All the oil produced is being sold to local people for domestic purposes, and is obtained direct from the wells. The gravity, ranging from 48 to 54, carrying about eighty-three per cent illuminants, makes this oil an especially desirable product for such purposes. It is also in great demand by the refineries, as this quality of oil is found in California, as yet, in very small quantities. This grade of oil should bring three times the price paid for the average of the State, which is now around sixty cents a barrel.

The principal company operating here is the American Duchess, which has been in the field for a number of years, and it will shortly be in shape to market its production and to start new wells. The company has three drilling outfits on hand and thousands of feet of casing and supplies of every description. A pipe-line is to be built to the railroad, which will come within a few hundred feet of the property, 600 feet below the wells.

One of the largest oil companies of the State has recently been quietly negotiating for properties, and it is understood to have acquired large interests. It is believed that the field will be developed extensively within the coming year, not in a haphazard manner as was done when many wells were drilled without careful investigation of the formation.

These operations were not continued, and so the active companies simmered down to one or two. Judicious and careful expenditure of money in this field should bring a large number of producers, as the territory is of considerable size, the greater portion not having yet been prospected to any considerable extent.

The seepages and oil springs that are found in various parts of the field are sufficient indications to oil men that the formation is favorable to commercial oil production.

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Exports and Shipments of Mineral Oil in August, 1908

CUSTOMS DISTRICTS	CRUDE OIL		NAPHTHAS, ETC.		ILLUMINATING		LUBRICATING, ETC.		RESIDUUM	
Domestic Exports										
Alaska	.....	.....	1,020	293	30	8	976	189	.....	.....
Los Angeles	2,191,644	52,182	.....	.....	.....	.....	.....	.....	.....	.....
Puget Sound	597,376	9,820	27,801	2,601	12,732	1,617	6,898	771	1,750	135
San Diego	.....	.....	.....	.....	400	74	252	77	3,687	396
San Francisco	1,806,000	25,800	.....	.....	8,838,280	445,648	30,289	7,874	21,000	1,323
Willamette	.....	.....	2,000	860						
Total	4,595,020	87,802	30,821	3,754	8,851,442	447,347	38,415	8,911	26,437	1,854
Shipments to Alaska										
From Puget Sound	64,750	2,748	61,396	11,340	36,863	6,540	10,745	5,038	.....	.....
San Francisco	4,444,980	66,180	10,290	1,551	100	17	4,309	1,902	.....	.....
Shipments to Hawaii										
From Los Angeles	672,000	9,600	.....	.....	22,000	2,970	.....	.....	.....	.....
San Francisco	2,499,000	46,450	52,245	6,218	139,700	21,160	38,478	18,753	.....	.....
Eastern Exports from										
Baltimore	.....	.....	1,055	236	1,670,085	100,234	262,650	39,298	.....	.....
Boston and Charlestown	.....	.....	3,050	396	5,427	645	14,996	2,606	.....	.....
New York	2,573,413	168,568	873,011	135,524	50,929,909	4,025,138	5,667,692	768,516	938,962	35,665
Philadelphia	367,780	37,484	650,454	42,921	35,126,152	2,098,290	3,449,060	336,922	1,416,865	53,144
Galveston	.....	.....	.....	.....	.....	.....	48,786	10,800	.....	.....
Sabine (a)	2,510,083	69,952	.....	.....	5,915,545	267,189	.....	.....	3,639,028	127,126
Total	5,451,276	276,004	1,527,570	179,077	93,647,118	6,491,496	9,443,184	1,158,142	5,994,855	215,935

NEW INCORPORATIONS.

The Lady Washington Oil Company has been organized with 500,000 shares of stock, par value $1.00. Entire issue placed in treasury. The property consists of a 20-year lease on 40 acres, southwest ¼, 6-11-23, Sunset district. The organizers are N. F. Wilson, D. H. McInnes, and M. J. McClure, of San Francisco. Fiscal agent, Lincoln Mortgage and Loan Company. The property was formerly known as the Haviland Oil Company.

The Southeastern Oil Company, incorporated for 500,000 shares, par value $1.00. The directors are Charles G. Wilcox, Louis Nathan, T. N. Davidson, C. A. Millenz, and M. L. Euphrat. Principal place of business, San Francisco.

The Great Divide Oil Company organized for 500,000 shares, par value $1.00. L. L. Herbert, Los Angeles; J. J. Grimmer, L. Samuels, L. R. Eccleston, and S. J. Watkins, Fresno. Principal place of business, Fresno.

The Coalinga Hub Oil Company, incorporated for 200,000 shares, par value $1.00. The directors are W. M. Dunham, E. H. Fallon, B. M. Bussey, F. M. Nevins, and F. Bennett. Principal place of business, Coalinga. Property northeast ¼, 14-21-15.

The Cousins Oil Company, with 100,000 shares of stock, par value $1, was organized, with principal place of business, Hollywood, by T. A. O'Donnell, M. L. McCray, E. J. McCray, A. M. McCray and L. A. McCray.

The Gladys Oil Company, with $50,000 capital stock, organized by H. C. Kerr, J. M. Robertson, K. V. Phoenix, T. J. Turner and S. D. Porter, Coalinga. This is a holding company with three quarter sections in 26-21-15, Coalinga.

The Amy Oil Company has a capitalization of $50,000 and owns twenty acres in Coalinga, being the East ½ of the N. W. ¼ of the S. E. ¼, 6-21-15.

RECENT PATENTS.

The following patents, recently granted, of interest to the oil trade, are reported expressly for The California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for fifteen cents each:

Anchor mechanism for well-packers, George A. Spang, Butler, Pa., assignor to Spang & Company, same place, 900,440.

Drive head or cap for well pipes or casings, David B. Whitehill, North Clarendon, Pa., 900,140.

Well-drilling machine, Roy L. Woodard, Richburg, N. Y., 900,636.

Well-drilling apparatus, Richard D. Moon, San Angelo, Tex., 901,182.

Well-drilling apparatus, John Conlan, Newark, N. J., 901,229.

Pump for oil-wells, Charles Dickinson, Maricopa, Cal., 901,282.

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MONTHLY STATEMENT OF DIVIDENDS PAID BY OIL COMPANIES LISTED ON THE CALIFORNIA STOCK AND OIL EXCHANGE. TO OCTOBER 31, 1908.

Company	No. of Div.	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	12	Sept. 22, 08	$0.03	$ 11,400.00	$ 136,800.00
Amalgamated Oil	15	Oct. 10, 08	1.00	50,000.00	750,000.00
Apollo	2	Mar. 20, 05	.01	2,000.00	4,000.00
Associated Oil Co.	4	Mar. 1, 07	1.50	420,000.00	1,522,309.39
Brookshire	30	Oct. 1, 08	.02	10,000.00	312,500.00
Caribou	42	Oct. 15, 08	.25	20,175.75	357,543.99
Chicago Crude	2	Mar. 25, 07	½c	5,000.00	15,000.00
Claremont	41	Oct. 15, 08	.01	4,500.00	192,500.00
Coalinga Pacific	6	Oct. 21, 08	.10	6,500.00	34,450.00
Columbia		Oct. 25, 08	.01	9,992.66	144,892.98
Esperanza	12	Oct. 29, 08	.01	1,600.00	19,050.00
Euclid	21	Oct. 1, 08	.01	3,500.00	64,500.00
Four	59	Oct. 25, 08	.01	3,000.00	186,000.00
Globe	15	Oct. 1, 08	.01	6,000.00	51,000.00
Hanford	30	Jan. 20, 06	2.00	4,000.00	80,000.00
Home	66	Dec. 20, 06	.01	1,000.00	440,000.00
Homestake	37	Oct. 1, 08	.10	1,000.00	69,250.00
Illinois Crude	20	Oct. 1, 08	.01	2,000.00	46,000.00
Imperial	62	Oct. 6, 08	.60	60,000.00	1,640,000.00
Kern River	35	Oct. 3, 08	.10	2,000.00	90,000.00
Linda Vista	8	Oct. 7, 08	.01	3,838.50	26,869.50
Lucile	2	Oct. 10, 08	.10	2,670.40	5,340.80
Monte Cristo	53	Aug. 10, 07	.01	5,000.00	265,000.00
Nevada County	3	Oct. 13, 08	.04	10,000.00	40,000.00
Peerless	66	Oct. 20, 08	.06	6,000.00	735,000.00
Piedmont	2	Mar. 7, 08	.01	3,890.00	7,427.30
Pinal		Oct. 5, 08	.15	22,500.00	572,341.00
Pittsburg	10	Nov. 11, 07	.24½	58,800.00	124,800.00
Reed Crude	8	Apr. 15, 05	1.20	120,000.00	1,101,000.00
Rice Ranch	8	Aug. 20, 07	.03	9,000.00	69,000.00
S. F. & McKittrick	5	Oct. 1, 08	.30	15,000.00	60,000.00
Sauer Dough	31	Sept. 1, 08	.05	9,975.00	309,225.00
Sovereign	12	Sept. 30, 08	.01	5,000.00	65,000.00
Sterling	15	Sept. 15, 08	.10	25,000.00	247,000.00
Superior	6	Oct. 20, 08	.01	5,000.00	30,000.00
Thirty Three	57	Apr. 6, 07	.30	30,000.00	640,000.00
Union	147	Oct. 20, 08	.50	117,711.00	4,303,250.15
United Petroleum	86	Oct. 20, 08	.50	40,375.50	1,492,576.43
Wabash	11	Oct. 24, 08	.02	6,000.00	66,000.00
West Shore	45	Oct. 15, 08	.10	10,000.00	225,000.00
Western Union		Dec. 15, 07	2.00	20,000.00	484,951.00
Total Dividends Paid to Date					$17,025,577.54

Below are some companies not listed on this exchange, and the total amount of their dividends to date, as copied from other official records:

California Oil Fields, Limited	$1,750,000 00
Central	483,926 00
Continental	15,000 00
Fullerton	142,000 00
Mexican Petroleum	1,402,400 00
Olig Land Company	13,000 00
Olig Oil Company	35,000 00
Olinda Land Company	40,000 00
Perseus Oil Company	13,564 00
Union Provident	1,132,000 00
Total	$ 5,026,890 00
Grand Total	22,052,467 54
Total Dividends paid by the above Companies for October, 1908	$419,363 81

Ten new Companies have been listed on this exchange in the last sixty days, five of which are dividend payers.

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Wheeling, W. Va., U. S. A.

See Harper's Weekly, Oct. 3, 1908

Patent Serial No. 450,294 August 25th

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A proven production of high-grade oil that sells at the wells at $1.50 per barrel. This oil carries about 83 per cent illuminants, and is in great demand for refining purposes. We can get $2.50 to $3 per barrel when delivered to refineries, so we are going to drill more wells and build a pipe line without delay. To raise money to meet that expense we offer a small block of treasury stock at a very low price. This offering, judged from every investment point of view, is an unequaled opportunity to buy proven stock at less than promotion prices.

High-grade REFINING OIL is not produced in any great quantity in this State. THEREFORE, IT IS IN GREAT DEMAND AND ALWAYS COMMANDS A PRICE TWO OR THREE TIMES THE PRICE OF FUEL OIL.

The AMERICAN DUCHESS OIL COMPANY has the elements of a safe and sane proposition for the man who buys its treasury stock. It has wells producing the highest grade of refining oil in the world, drilled at a moderate cost; has three drilling rigs on hand, about 10,000 feet of casing, tools, machinery, machine shop, pumping plant, electric light plant, camp outfit, proven land, proven competent management, with railroad transportation close at hand, giving to the stock buyer the assurance of the safety of his money invested and the certainty of profit.

THE PROPERTY IS PROVEN AND IS APPROACHING THE DIVIDEND-PAYING PERIOD.

STOCK OFFERING: Only 50,000 shares are offered at the low price of EIGHT (8) CENTS PER SHARE. It ought to sell for 25 cents or more, based on value; but times are a little hard, hence this extremely low price, which will quickly sell this small offering. When this stock is sold the total outstanding stock will be about 775,000 shares, which, figured at 8 cents per share, gives a valuation of $62,000, whereas the property owned and controlled by the AMERICAN DUCHESS OIL COMPANY, the money spent in development, the purchase of tools, materials, machinery, labor, etc., aggregates a sum in excess of $62,000.

BUYERS OF THIS STOCK ARE GETTING MORE THAN VALUE RECEIVED, AND ARE BUYING INTO A COMPANY HANDLED BY EXPERIENCED MEN, WHERE TIME, EFFORT AND MONEY HAVE PROVED THE PROPERTY, HAVE PROVED THE MANAGEMENT AND PROVED THE GENERAL WORTH OF THE PROPOSITION.

THE NEXT BLOCK OF STOCK WILL BE OFFERED AT A MUCH HIGHER PRICE.

RAPID DEVELOPMENT: It is the intent and purpose of the company to rapidly push work and get many more producing wells during the coming year. Having machinery, casing, supplies and materials on hand, the company can drill wells at a remarkably low cost. Having all facilities for such work at hand, the drilling of other wells economically and rapidly is assured. The dividend period of this company is in sight, and the payment of the first dividend means that this stock will be worth much above its par value of $1.

This small treasury allotment is selling rapidly, and buyers should make immediate reservation. The next allotment will be at a much higher price.

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PETROLEUM PRODUCTION FOR TEN YEARS.

According to the comparative table of mineral production for the years 1898 to 1907 inclusive, issued by the Department of the Interior, petroleum to the value of $821,231,209 was produced, the total for the ten years being 979,050,840 barrels.

Years	Barrels	Value
1898	55,364,233	$ 44,193,359
1899	57,070,850	64,603,904
1900	63,620,529	75,989,313
1901	69,389,164	66,417,335
1902	88,766,916	77,178,910
1903	100,461,337	94,964,050
1904	117,080,960	101,175,455
1905	134,717,580	84,157,399
1906	126,493,936	92,444,735
1907	166,095,335	120,106,749
Total	979,050,840	$821,231,209

The highest prices prevailed in 1900, an average of $1.20 per barrel being obtained, while the lowest price was in 1904; the average for the ten years being a little less than 84 cents per barrel for all grades of crude product. The average price for last year was approximately 72½ cents per barrel.

It will be noted that the production for 1907 was almost exactly three times that of 1898 and double that of 1902. California last year furnished nearly one-fourth of the entire production of the country and supplied 8/11 as much oil as was produced in the United States ten years ago.

STANDARD'S NEW REFINERY.

The Standard Oil Company has planned to throw open on January 1st a secretly constructed oil refinery that will be the largest in the world. Over 5,000 workers expect to secure immediate employment there, but the ultimate capacity is expected to supply work for more than 10,000 skilled and common laborers.

The Bay Way Refineries Company is the name of the great industrial establishment. It is located at the little junction of Bay Way, N. J. The great tract covers more than 2,000 acres.

Just one year ago the great tract was covered with a young forest and tough sea grass. In one month the clearing of these acres was accomplished and eleven months of construction work, employing from 2,400 to 3,750 men at the different stages of development, has transformed all of this into a modern industrial plant.

WILL APPEAL TO HIGHER COURT.

The Government is still a long way from collecting that $29,000,000 Judge Landis said the Standard Oil Company owed it. Judge Grosscup decided that Landis erred in rendering his decision, and the Attorney-General asked for a rehearing, which request has been denied. The matter is now to be taken to the highest tribunal in the land for final decision.

This is too bad, for, law or no law, the Government needs the money, because the Postal Department failed to meet expenses last year by about $18,000,000, and that $29,000,000 would have come in just at the right time if Standard Oil had known enough to have stepped up and paid the fine right on the spot instead of taking advantage of its rights of appeal.

Whether the decision was originally made according to law is yet to be decided. As the matter now stands, Judge Landis exceeded his discretionary powers, because a judge, higher in authority, has so decreed. Just how the law is to be interpreted will now lie with men still higher in authority. The law is not changed by any decision that can be rendered, but what the law means depends upon the view-point of men constituting our courts, and when final decision is rendered, that decision becomes the law, displacing the regularly-made statutes of the nation, for just what law is and means depends upon the interpretation of the courts.

Nevertheless, that $29,000,000 would be a nice little sum just at this time for the Government to use, but it is not yet available.

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THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., December, 1908 No. 10

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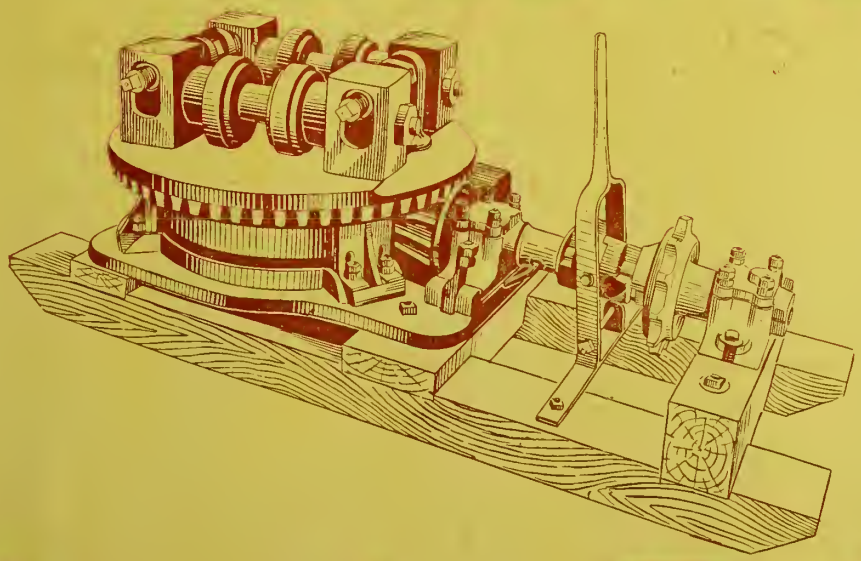

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 **San Francisco, Cal., December, 1908** **No. 10**

California's Greatest Industry

The production of oil in California for the year 1908 will amount to approximately 48,000,000 barrels, worth, at an estimated average valuation of 48 cents for each barrel of 42 gallons, $23,040,000. While the gain in volume in production is only about 20 per cent, the advance in price is a trifle over 25 per cent. The total valuation according to government figures for 1907 was in excess of $14,000,000; therefore the gain in value of oil has been more than 60 per cent.

One of the features of the business has been the entrance into the market of Midway oil. Another feature is the passing, during the past two months, of Kern River from the lead, Coalinga taking its place, with Kern River second. The Sunset district has increased its production by more than 1,000 barrels daily and McKittrick by about 2,400 barrels daily.

Even with this enormous increase, prices are still advancing, and we understand the marketing companies are willing to pay even higher than 63 cents per barrel. In the Coalinga field, the light oil is being sold as high as 87½ cents per barrel, and in the Santa Maria district 70 cents is the prevailing price for this quality of oil. For the very heavy fuel oil, 50 cents per barrel is not a high figure. There is a strong demand for the light oil for refining purposes, and there is little doubt that the price will reach better than $1.00 per barrel within a short time. For the lower grade we look for the average to be around 65 to 75 cents during the coming year, and it is not beyond the bounds of reason to expect prices for all grades to reach $1.00 before the end of the year.

Thus is California's oil industry progressing. That it is an extremely profitable industry is evident from the facts as given herein. But California's oil industry is as yet but just started. The activity seen on all sides, in all the old fields, in several new ones, is precursory of a production and valuation that will advertise California oil the world over.

The increase in the production during the last three months of the year will more than offset the lesser amount in the first three months, so that a fair estimate for the year will be 48,000,000 barrels. The average price of oil in 1907 was about 37 cents, and in 1908 it will be around 48 cents, which would make a total valuation for the year of $23,040,000.

The following is the production of California from April to September inclusive:

	April	May	June	July	Aug.	Sept.
Coalinga field, east side	592,400	554,000	553,000	580,000	601,200	613,306
Coalinga field, west side	222,260	300,300	335,050	346,850	349,250	355,200
Total Coalinga field	814,660	854,300	888,050,	926,850	950,450	968,500
Kern River field	1,110,000	1,080,000	1,100,000	1,097,000	1,098,000	1,063,700
McKittrick field	197,000	203,000	237,000	224,000	270,000	272,800
Sunset field	96,000	93,000	130,000	150,000	170,000	131,000
Midway field		25,000	34,000	34,000	35,000	25,500
Santa Barbara County field	750,000	750,000	750,000	700,000	700,000	700,000
Ventura County field	24,000	24,000	24,000	24,000	24,000	24,000
Summerland field	5,400	5,400	5,400	5,400	5,400	5,400
Los Angeles City field	275,000	300,000	300,000	40,000	40,000	40,000
Salt Lake and vicinity field	275,000	300,000	300,000	330,000	330,000	360,000
Fullerton and vicinity field	275,000	300,000	300,000	330,000	330,000	330,000
Whittier field	40,000	60,000	60,000	60,000	60,000	60,000
Total	3,861,660	3,994,700	4,128,450	3,921,250	4,012,850	3,980,900

Standard Oil Company to Take Over Union Oil Company of California

At the coming meeting of the directors of the Union Oil Company of California, it is likely that important changes will be made in the personnel of the boards of both parent and subsidiary companies.

THE DERRICK has it upon good authority that the Standard Oil Company has secured control of the stock of the Union Company and will dictate the management of the company hereafter. While the company may continue to be operated as an independent concern in name and in a general business way, it is probable that, so far as competition at either end of the market is concerned, there will be no such thing.

This development is but the natural course of events, as the Union has grown to be a big concern, much too large to be a comfortable antagonist to the Standard. It has, too, become a very profitable concern and as an investment should be an extremely good one from a purely business standpoint. The removal of competition and the profit-earning capacity of the company make the deal an excellent one for the Standard.

It will be remembered that John Baker, Jr., recently practically severed his connection with the Union, and it is generally believed that his resignation takes effect at the next meeting of the board. Mr. Baker has been one of the most influential factors in the success of the company, but it is not Mr. Baker's nature to step again into a subordinate position, which he would have to take under a new management.

And so the "octopus" reaches its tentacles out to grasp everything of a profitable nature in sight. Mr. Archbold said in his testimony in New York the other day that he at one time promised to drink the entire production of oil west of the Mississippi. While the feat proved to be too large a one for even a Standard Oil man to accomplish, yet Mr. Archbold and associates are willing to do their best towards drinking all the profits from oil west of the Mississippi, which amounts to the same thing.

OIL PROSPECTS IN NEVADA.

Preliminary Statement of the Results of Investigation by U. S. Geological Survey.

During the early part of November, 1908, a brief examination of the oil prospects in Nevada was made by Robert Anderson, a geologist of the U. S. Geological Survey. Several days were spent in the field west of Reno, and one day each in the region north of the bend of the Walker River, east of Wabuska, in Smith Valley, north of Wollington, and in a small area south of Palisade, in Northeastern Nevada. The following is a brief statement of the more important conclusions reached by Mr. Anderson. A more complete discussion of the information obtained will be issued during the winter, and will be obtainable upon application to the director, United States Geological Survey, Washington, D. C.

In Vicinity of Reno.

The hills west of Reno to the north and south of the Truckee River are composed of a thick series of unconsolidated beds of sand, clay, diatomaceous earth, volcanic tuff and gravel, dipping eastward and northwestward away from the mountains at angles of from 15 degrees to 35 degrees. These beds have been called the Truckee beds. They overlie andesite lava and older igneous and metamorphic rocks, such as form the mountains to the southwest and northwest, and were laid down upon them as sediments in a freshwater lake that covered much of this portion of Nevada during middle Tertiary time, when the region was much less mountainous than now. Subsequent to the deposition of these beds, mountain-making forces have produced the surrounding mountains and have tiled the beds up into their present attitude, beside fracturing them throughout with an intricate system of dislocations. Later periods have witnessed likewise a great amount of erosion of the mountains and hills, the presence of other lakes, and the deposition of a comparatively thin covering of sand and coarse gravel over most of the hill and valley area around Reno.

If petroleum were present it would with little question have to be considered as originating in the Truckee beds, and there, if anywhere, it would be stored. The examination of these beds has resulted in the conclusion that no paying quantity of petroleum, if any at all, will be found in them, for the following principal reasons:

First: No indication of the presence of oil has been discovered in the beds at the surface, although they are tilted and the succession exposed as a whole in such a way that some of the oil, if any were present, could hardly fail to escape to the surface and leave a trace. Moreover the completely permeating system of small fault fractures would lend further avenues of escape. The supposed indications of oil that have been reported by previous observers are iron, manganese and vegetable stains in certain strata and occasionally in the surface of standing pools of water in the vicinity.

Second: The structure of the beds is that of a monocline of considerable dip, at the base of which the oldest beds of the formation are exposed overlying the volcanic rocks of the mountains. The summit of the anticlinal fold, which probably once arched over toward the west into the southwest dipping strata of the Verdi region, and which would have afforded the best conditions for the accumulation of oil, has been completely removed by erosion. The tilted, erosionally truncated and intricately faulted condition of the strata would favor the diffusion and escape of the oil, if any were present, rather than its accumulation in large quantities.

Region East of Wabuska.

The examination was confined chiefly to the basin-like valley in which the Yerington Oil and Gas Company is drilling a well, north of the great northerly bend of the Walker River and about eight miles eastward from Wabuska. This valley is fairly typical of a number of similar basins in this region that form elbows in the valley of the Walker River.

The basin is surrounded by mountains formed chiefly of lava and volcanic fragmentary matter, and has a fairly level floor with surface covering of loose sand and compact clay. Horizontal strata of unconsolidated sand and clay, and detritus from the mountains have accumulated in this basin within a comparatively recent (Quaternay) period of geological time, probably nowhere to a depth exceeding a few hundred feet. The shallow and local nature of this filling is indicated by the fact that little knolls of the lava that forms the bed rock of the valley occasionally arise above the floor, in some cases very near the river. The chance of finding oil in this vicinity must be considered very slight for the reason that there is no evidence of the presence of any strata that might be looked upon as probable oil producers.

Region of Smith Valley.

The portion of Smith Valley that was visited was the northern part, extending from a line drawn eastward across the valley from Hind's Hot Springs northward to Buckskin. The mountains on the east of Smith Valley are formed chiefly of much altered limestone intruded by granite and rhyolite and capped with andesite lava; those on the west chiefly of granite and porphyritic igneous rocks. The valley itself contains a filling of horizontal lake beds of unconsolidated clay and sand which are exposed in low bluffs at the edge of a terrace on the side of the valley. These beds probably belong to the late Tertiary period, when a lake must have covered the valleys of this region. The beds do not date so far back as those in the vicinity of Reno. They are locally overlaid by talus and alluvial fan deposits at the base of the mountains, and by a comparatively thin coating of recent sand and clay deposits that have been laid down over the floor of the basin. No definite estimate can be made of the depth of the sediments in this valley, but it may be said that they are probably underlain at a depth of not very many hundred feet by the volcanic rocks or older bed-rock series. The geologic character of the region is not such as to favor its selection as a possible petroleum producer.

Region South of Palisade.

A brief examination was made of an asphalt prospect in northeastern Nevada, about fifteen miles south of Palisade, near the foot of the mountains east of Maples' ranch on the Eureka & Palisade Railroad. At this locality a lustrous black asphaltite, resembling in character the variety called Impsonite, occurs in veins and stringers along fracture planes, and as sheets along bedding planes in well-indurated calcareous and clay shale and sandstone beds of Carboniferous age. The lenses of asphalt are variable in size and occurrence. The greatest width of any ore observed in the prospect openings is about eighteen inches. The asphalt cannot be traced on the surface of the ground, but similar material occurs at different points several miles distant, and it is probable that the zone of fracturing in which it has collected has considerable extent.

The sandstone, shale and conglomerate of this vicinity are tilted toward the southwest at angles from 50° to 70° on the average, and have undergone considerable disturbance. Owing to the great age of the beds, this disturbed condition, and the consequent opportunities for the escape of the petroleum content which may have been at one time present, it is likely that almost all, if not all, such oil has long since escaped or become altered into the derived form of asphalt. Further investigation should be made of this region south of Palisade, however, before such a conclusion should be considered as applying to any area except the immediate vicinity of the asphalt prospect mentioned.

LAND WITHDRAWN PENDING REPORT.

Two Townships on West Side Excluded From Entry.

As a result of the oil boom that prevails along the eastern border of Alameda County and the western portion of San Joaquin and Stanislaus Counties, the Department of the Interior has temporarily withdrawn from entry all the Government land in an entire township which lies in all three counties and another that lies entirely in Stanislaus County, pending a report of agents of the department which will depend upon developments now under way.

Township 4 south, range 4 east, and township 4 south, ranges 5 and 6 east, are those which are withdrawn by the order which is dated November 10th. The sections of the first-named township mentioned in the order as withdrawn are 1, 2, 3, 10, 11, 12, 13, 14 and 15. There is evidently an error in this as the odd numbered sections are what is generally known as railroad land but which appear on the assessment rolls under the names of Mary Ives Crocker and Kate May Dillon.

NEW INCORPORATIONS.

The Amaurot Oil Company has been incorporated at Bakersfield with a capital stock of $25,000 by M. S. Mathew, Jas. Mason, A. J. Tegler, J. E. Lutz, and C. L. Miles.

The Dixie National Oil Company has been incorporated at Los Angeles with a capital stock of $1,000,000 by D. L. Peters, F. E. Schaad, J. S. Eddy, E. B. Rhoads, and J. W. Kemp.

Hegyi Oil and Chemical Company was incorporated for $10,000 at Los Angeles with Gabor Hegyi, C. M. Smith and A. C. Bollinger as incorporators.

The Lake View Oil Company was incorporated by Julius Fried, C. E. Currier, F. C. Dunlap, R. D. Wade, C. F. Off, L. Robinson, and J. P. Vawter, of Los Angeles; $100,000 capital.

The West Side Oil Company was incorporated by W. Gillelen, R. W. Kennedy, G. W. Walker, W. D. Wilson and W. R. Wheat, of Los Angeles, with a capital stock of $100,000, at Los Angeles.

The Elsinore Oil and Gas Company was incorporated by J. A. Crane, C. S. Merrifield, L. H. Young, Chas. Hudson, J. A. Cline, J. S. Cobb and Hugh Walker, of Riverside, Cal., for 500,000 shares.

The Hawaiian Oil Company was incorporated by R. M. Sims, Edwin Schwab, W. C. Webb, Marion Vecki and R. C. Burnett, of San Francisco, for 250,000 shares.

The Honolulu Oil Company, with 1,000,000 shares, was incorporated by the same incorporators as the Hawaiian.

The Section Thirty Oil Company has been incorporated at San Francisco with a capital stock of $500,000 by W. L. Evans, A. D. Windsor, G. W. Strominger, T. C. Gray, and Paul Kocher. The incorporators have subscribed for $200,000 of the capital stock of the company.

The John Kern Oil and Development Company has been incorporated at Fresno for $200,000 by J. J. Kern, C. McCoy, J. J. Pimental, W. M. Barron, and W. D. Crichton.

The King Keystone Oil Company of San Francisco has made application to change its name to the Monarch Oil Refining Company. The matter will come up in the Superior Court on December 28th.

The Belle Vernon Oil Company has been incorporated at Los Angeles with a capital stock of $50,000 by G. H. Sessions, A. F. Gillmore, F. N. Pellisser, G. E. Platt, and I. T. Henderson.

The Altamont Oil Company has been incorporated here with a capital stock of $1,000,000 by E. F. Eastman, A. F. Haraszthy, Myer Jacobs, Carl Kaufmann, and D. R. Swift. 160 acres, Altamont, Alameda County.

The Hog Valley Oil Company has been incorporated at San Francisco with a capital stock of $1,000,000 by R. M. Dunlevy, H. L. Allen, and John Neu.

The Denton Oil Company has been incorporated at San Francisco with a capital stock of $100,000 by R. M. Sims, Edwin Schwab, W. C. Webb, Marion Vecki, and C. R. Burnett.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for The California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Derrick-hoist, Burton G. Cope, Orrville, Ohio, assignor to The Cyclone Drill Co., same place, 903,271.

Oil-well plug, Ernest Porter, Monticello, Ky., 903,314.

Rachet-lock for screw-joints of well-drilling tools, Wm. Barrott, De Beque, Colo., 903,435.

Well-packer, Colonel C. Heeter, Butler, Pa., 904,202.

Well-drilling machine, Delbert W. Saunders, Maquoketa, Iowa, 903,889.

Automatic cut-off for oil-tanks, Henry G. Weitzel, Baltimore, Md., 903,926.

Derrick-swinging mechanism, Oscar J. Martinson, Chicago, assignor to Monighan Machine Co., same place, 903,997.

Manufacture of gas, Julius Bueb, Dassau, Germany, 904,043.

Drill-rod coupling, Wallace Minard, Oil City, Pa., 904,210.

Oil-cup, Walter McLain, Spiritwood, N. D., 904,354.

Oil-pump, Russel Huff, Detroit, Mich., assignor to Packard Motor Car Co., same place, 904,434.

Exports of Mineral Oil for September, 1908

CUSTOMS DISTRICTS	MINERAL OIL CRUDE		MINERAL, REFINED OR MANUFACTURED							
			Naphthas, Etc.		Illuminating		Lubricating		Residuum	
Domestic Exports										
Alaska			15,860	3,083	53,580	8,265	2,337	913		
Puget Sound			30,488	2,189	180	25	6,545	915	6,558	328
San Diego					575	112	195	57	681	70
San Francisco	1,470,000	21,000	7,111	1,565	1,759,247	80,244	22,901	4,494		
Total	1,470,000	21,000	53,459	6,837	1,813,582	88,646	31,978	6,379	7,239	398
Shipments to Alaska										
From Puget Sound	43,400	1,357	44,053	6,139	84,368	22,270	11,802	5,170		
San Francisco							529	322		
Shipments to Hawaii										
From Los Angeles	2,499,000	47,600	64,800	8,748						
San Francisco	2,789,000	46,850	36,294	3,892	116,000	17,773	11,927	5,820		
Shipm'ts from East'n Ports										
Baltimore			10,652	3,304	1,883,209	113,064	356,703	57,870	446,936	17,877
Boston and Charlestown	75,490	6,927	2,050	346	66,900	8,308	25,850	4,247	114,822	5,951
New York	5,843,363	359,472	2,579,157	315,083	57,561,664	4,244,974	7,862,375	1,020,620	2,000	200
Philadelphia	26,095	2,519	390,366	43,680	30,874,215	1,899,480	5,304,086	548,347	3,439,585	112,637
Galveston							31,202	8,365		
Sabine	665,229	14,269	1,467,033	102,692	7,885,637	354,853			5,826,652	203,932
Total	6,610,177	383,187	4,449,258	465,105	98,271,625	6,620,679	13,580,216	1,639,449	9,829,995	340,597

Petaluma, a Promising New Oil Field

The development of California's oil fields is going ahead at a rapid pace, stimulated by the certainty for years to come of a stable market for the product. This is true not only of the proved districts but in the newer fields where indications are even more promising than they were at the same stage of development a number of years ago in the now producing sections.

While the principal development and the large production is in the southern fields of the State yet the northern districts, especially around San Francisco Bay, are receiving the deserved attention that they should have had years ago. The features of down where appearances are not nearly so favorable as in this section.

The operations of the Ramona Company during the next few weeks will be looked forward to with much interest, although there is every reason to expect a producing well. The company has secured leases on 2,000 acres of oil ground within the formation and expects to start another well even before the present one is brought in. In the event of discovery of oil in this well it is the intention of the Ramona Company to grant a number of sub-leases, as these will be in great demand. In addi-

Ramona Oil Company, Showing Outcrop in Circle.

the oil districts about the bay are, that they are right at tidewater and the product can be readily and economically marketed, thereby saving considerable sums on the cost of transportation.

The particular district with which this article has to deal is near Petaluma, where the Ramona Oil Company is engaged in drilling a well under the most favorable conditions. The well is located about five miles southeast from Petaluma, about 50 feet above sea level. At this writing a depth of 355 feet, with 11⅝-inch casing, has been reached and the drill is nearing the first sands which on the surface appear to be from 75 to 150 tion a large portion of the ground near the well will be developed by the company on its own account. Should the entire tract prove to be oil-bearing territory there would be enough room to put down 600 or 700 wells, as it is usually considered good business to sink a well to every two or three acres, although in some instances wells are much closer together.

The Ramona Company is controlled by experienced oil men, John M. Wright, of the Peerless, Fulton and other companies being president; Chas. W. Gregg, of the Gregg Investment Company of Denver, who are operating at Colorado

Wharf at Petaluma, Showing Boats at Extreme Right.

feet in thickness. Between the first and second sands, the latter being the stratum from which the oil will be produced, there is an intervening distance of around 150 to 200 feet so that according to estimates on the surface and the dip of the formation a depth of from 700 to 800 feet will have to be attained before the second sand is penetrated.

The surface indications here are those always looked for in prospecting for oil ground and whenever they are found there is sufficient assurance for experienced oil men to go ahead with development. As a matter of fact many a drill hole is put Springs, vice-president, and Gurdon Bradley, of the Peerless Oil Co., secretary. Mr. Wright's success in his present and former operations is so well known that no comment need be made. Anything with which he is connected is looked upon with favor by those who know his record, hence from the standpoint of good judgment pertaining to the selection of oil territory and its development, those already interested in the company are willing to follow his lead.

Petaluma is known as an "egg" town It produces millions of dozens of eggs each year. It is the largest single egg-pro-

ducing section of the world. But Petaluma is also a manufacturing town, one of the largest on the coast, a fact that few people realize and practically nothing but oil is used as fuel. There is a market, therefore, for a large amount of oil, several hundred barrels a day, all of which is shipped in by water and rail. Boats enter the heart of the city and the oil is stored in the large tanks provided for that purpose. In most cases tank cars reach the consumer on his own siding.

The Ramona Company proposes to build a pipe-line to tidewater, a distance of only about three miles and it is likely that smaller lines will connect the various establishments using oil in any quantity with the main line.

Petaluma is only about two hours' ride by rail from San Francisco, the railroad following the inlet from Tiburon Ferry up through the valley which is one of the finest agricultural portions of the State of California. The run by steamer is about four hours.

The Ramona Oil Company has secured the services of expert drillers, the superintendent being Mr. K. V. McDonald, who formerly was in the employ of the Peerless Company at Coalinga. The equipment of the company, furnished by the Oil Well Supply Company, is of the latest type of Standard rig, 35-horsepower engine and 50-horsepower boiler using oil for fuel.

The report of the analysis of the sands as found on the surface made by Smith, Emery and Company, of San Francisco, is appended herewith and it is likely that the same analysis will apply to the formation wherever it outcrops. The principal outcrop is found within a short distance of the location of the well now being drilled, both sands showing prominently a short distance to the north and a few feet below the point where the well was started.

"Petaluma" or Upper Sand.

Oil in Sand 3.48%

Analysis.

Specific Gravity .9746=13.65° Baume.

Asphaltene 2.86%
Sulfur ..... .73%

Lower Seepage.

Oil in Sand 4.50%

Analysis of Sand.

Specific Gravity .9655=14.9° Baume.

Asphaltene 2.30%
Sulfur ..... .71%

A GERMAN EXPERT ON AMERICAN PETROLEUM.

Doctor Ubbelohde, of the Technical University of Carlsruhe, Talks of a Trip Through the Oil Regions.

Dr. Leo Ubbelohde, chairman of the International Commission for the Unification of the Methods of Testing Petroleum, of Carlsruhe (Germany), has made a trip through the United States, at the instigation of the United States Government, the purpose having been to look into the conditions of our oil industry and our commerce in the light of the resolutions of the International Commission. Dr. Ubbelohde is connected with the Technical University of Carlsruhe (Germany), and is a recognized petroleum expert.

The International Commission for the Unification of the Methods of Testing Petroleum was elected last year at the Third International Petroleum Congress. It consists of nineteen members from all countries, and the American representative is Dr. Day, of the Geological Survey.

Referring to his trip through the oil field, Dr. Ubbelohde had this to say:

"During my trip through the oil regions of the United States I was particularly impressed with the wonderful resources of Southern Louisiana, not only in regard to petroleum, but also in regard to the enormous wealth evident there in sulphur, salt and natural gas. I was particularly favored in being the guest of Captain Anthony F. Lucas, who has won particularly creditable fame among the oil savants of Europe for his good judgment in regard to oil-well drilling there, in addition to his remarkable success in predicting oil at Beaumont, Texas, and drilling the celebrated Lucas well at that point, thus developing the Beaumont field. Captain Lucas and his associate, Mr. Knapp, made it possible for me to visit, in company with Dr. Day and the chief geologist of the United States, the interesting region of Belle Isle, in the extreme southern part of Louisiana, and almost on the edge of the Gulf. At this celebrated locality salt has been mined for many years, and the recent investigations by the deep wells sunk there show the existence of salt to the phenomenally great depth of at least 2,600 feet, and sulphur has already been found there. The oil from this region is the most remarkable that I have seen in the United States, inasmuch as it contains a very large percentage of paraffine, is lemon yellow in color, and altogether different from the Jennings and Welsh petroleum near by, which is black and contains much sulphur and asphalt. There is such a large percentage of paraffine in this peculiar and interesting Belle Isle oil that when it is allowed to stand in the sun over one day it turns to semi-solid paraffine wax by the following morning. The wonderful indications of natural gas in the southeast of Belle Isle struck me as presaging an enormous supply of this material for industrial purposes in the next few years, and taking this, together with the supplies of salt, sulphur and petroleum, make it evident that Southern Louisiana must of necessity become the seat of chemical industries, comparable with Glasgow, Solvay and the other celebrated chemical centers of the world, provided, of course, that the proper manufacturing spirit is developed in the community. My visit to the Caddo oil field on the following day was most interesting. Probably few persons recognize that the Caddo field is pouring out into the air at least 70,000,000 cubic feet of natural gas per day, which is being absolutely wasted. The roar of the gas can be heard for three miles, and when lighted the glare on the sky can be seen at Shreveport, twenty-five miles away. Surely this is the most aggravated case of American advertising that can be conceived, for all the good that comes from this enormous waste, sufficient to supply ten cities the size of my own city of Carlsruhe, Germany, or of Washington, D. C., is to attract the attention of a few passers-by on the trains. I question, however, whether the effect is favorable, when the possible investor considers that he must take his chances among people accustomed to the profligate waste there in evidence. I visited the famous mud-volcano at Caddo, which resulted from the blowing out of a gas well, forming a crater 300 feet in diameter, filled with salt water and oil, all churned together by the continual outpouring of natural gas, making a black fountain of mud, which, when lighted, burns with an enormous flame some twenty feet in diameter, until the temperature of the air is raised to the boiling point, and after many hours the steam extinguishes the blaze.

"I learned that some of this natural gas is piped to Shreveport and northward to Texarkana, but it is a problem too deep for one unaccustomed to the United States to solve as to why in Pennsylvania the natural gas distributers should go to great pains to collect natural gas, even by the enormous suction pumps, draining the last cubic foot of natural gas from Pennsylvania and West Virginia wells, and pumping the product more than 200 miles to Cleveland, Ohio, and yet allow New Orleans, a better market for fuel, to go without the gas, which would flow by its own pressure much farther, and which is now being wantonly wasted in the same State. In my own country the national government would be obliged to interfere in such a waste of the general resources of the country.

"The waste so greatly in evidence in Caddo is offset by the wonderful thrift of the oil producers of Oklahoma, or rather the thrift of the pipe line companies who collect the oil. No one can see the farms of thousands of monster oil tanks in the Glenn pool, at Muskogee, and in the shallow sand territory without marveling at the engineering skill and at the alertness of the pipe line companies in taking care of this enormous production with such wonderful rapidity. In Germany we all know the troubles involved in even securing promptly from the steel works the necessary material for the construction of such tanks, and the capacity for this in the United States is strikingly illustrated in Oklahoma. Again, we know the difficulty in manufacturing such large tanks, of securing the men equipped with the necessary precision to build these tanks with sufficient care to prevent leakage. In these matters the efficiency of the United States is evident, but above all it is evident that here in the United States the supply of oil exceeds all the promises of the rest of the world, and yet your rate of consumption, as shown by the figures of the United States Geological Survey, must make the oil refiner look with care to still other fields in which the United States will probably be found rich. The story of the Illinois fields, which I had the pleasure of visiting, under the fortunate guidance of the Assistant State Geologist of Illinois, Mr. Blatchley, and through the courtesy of Mr. D. T. Finley, the man who drilled the first successful oil well in the Robinson pool, is but an extension of the evidence of wonderful richness in liquid and gaseous fuel, and here one is again struck by the engineering skill of the collectors of oil. No better example of this can be instanced than the system by which the oil from the producers' tanks is made to flow, by gravity, to the large tank farms of the pipe line companies, from there to be pumped to its final destination—a saving of a cent a barrel by this simple device alone.

"After going through various oil refineries of the East, by the courtesy of the Standard Oil Company and the Independent refiners, and noting the great technologic advances characteristic of these refining industries, I am all the more anxious to visit the California oil field in the next year. From what I have read, California must be depended upon, among the fields known to-day, for the largest supply of oil known in the United States, and the characteristics of these California oils, their content of peculiar nitrogenous compounds, the excessive amount of benzol and other aromatic hydro-carbons, and the methods of refining which these peculiarities have necessitated, all strongly attract the technologist, and it is in California that the problem of profitable and rational utilization of petroleum as a power producer must be carried out.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

W. H. SLAYTON, Editor and Manager.

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DECEMBER, 1908

NEW OIL FIELDS.

Besides the extension of development in the productive oil fields of the State, a large amount of drilling is being done in new fields, especially in the central and northern portions. In Monterey County, at Orosi, Altamont, Petaluma, Mendocino County and Mono County drillers are at work with great vigor. Should any one of these fields meet the expectations of those who are backing the operations, an activity unprecedented will prevail.

This work is the best evidence that could possibly be asked for of the insistent demand for oil, which can not be met from the present productive fields, even though the output is increasing very rapidly. That the Standard is spending hundreds of thousands of dollars in the new fields is additional evidence that more oil must be had quickly to supply the demand.

It is good to see this work going on, and every encouragement should be given to all operations wherever there is a probability of opening a new field. As much assistance as possible should be given these operators who are doing a pioneer work in California that may result in the addition of hundreds of millions of dollars to California's known resources. The State should officially take notice of these conditions and lend a helping hand.

IN A QUANDARY.

The question of dishonest promotion is agitating the minds of various bodies of oil men throughout the State, especially the independent producer's agencies. These bodies do not know how to go at it to prevent fake promotions. They are like a great many other people who do not know how to prevent colds. They do not know how to prevent water trouble in oil wells. In spite of all efforts, water trouble will sometimes come in and cannot be prevented by known appliances. Doctors disagree in their diagnose of diseases of humankind. The government is trying to prevent monopolies. Ministers are endeavoring to find some way of suppressing evil.

It is not strange, therefore, that oil men do not know how to prevent dishonest promotion. We have a remedy. Make every man honest and upright and there will then be no necessity for any law. Laws are made to prevent misdeeds, but misdeeds occur very often, and there is no power within human knowledge that can prevail upon humanity to conduct themselves according to the moral law.

If fake promotions could be prevented, even if we were sure that we could brand absolutely a promotion as a fake or legitimate, we might prevent them. When an industry is as prosperous as is the oil industry of California, does anyone think that the barnacles will not cling to that industry?

If dishonesty were peculiar to the oil industry, some method might be devised to cure the evil. It is not peculiar to the industry, neither is any walk of life free from it. It is as common in the dealings between man and man as it is between one man and the public. Even some oil men are not free from this common failing of humanity, even those who stand high in the estimation of their fellow men, although they would not, for the world, attempt a fake promotion.

We do not like to dwell upon this subject, because there is so much that is good about the oil industry that the fake promotion business in California oil stocks seems insignificant and infinitesimal as compared with the real thing. Dishonest promotion is no more reprehensible than any dishonest dealings among oil men or among any other class of men. Of the fake promotion we hear much talk but of the average dishonest man we hear but little.

He is a wise man that can positively say, "this is a fake," or "this is an honest deal," because he may be mistaken in either instance.

If the sailors were to engage primarily in wiping the barnacles from the ship they would have but little time left to run the engines and guide the craft. If we spend our thoughts and our time in "branding" companies we will soon arrive at the point where one fake will appear as large to us as the $20,000,000 production of oil in California this year.

OIL MEN SHOULD UNITE.

The Derrick advises the oil men of the State to unite in demanding of the Legislature, soon to meet, an appropriation for the State Mining Bureau, sufficient to carry on the work for which the bureau was organized. Oil has never received the attention of the bureau it has deserved, but the time has now arrived that something must and will be done.

Inaccurate official information spread broadcast is not only of no benefit, but it is a positive detriment and better not be published. Statistics, especially, should be approximately correct and can be made so by proper investigation, systematically carried out. The Derrick realizes the difficulty in obtaining statistics, but at the same time knows that they can be secured and proposes to secure them for the benefit of the public, but our figures cannot be accepted as official, although they will be approximately correct.

An instance of the lack of method in this respect is the discrepancy between California's bureau report of the oil production of last year and the government figures, which were as correct as possible. While the number of barrels was not so far off, yet there was a difference of nearly two million dollars in the amount received for the oil, the bureau promulgating the $16,000,000 figures and the government the $14,000,000 figures. This placed us in the ridiculous position of claiming that the value of oil for 1907 was greater than gold. This year the value has so far outstripped that of gold that a discrepancy of $2,000,000 would not be noticeable.

For the information of the public, not only the old fields should receive attention, but the new ones coming into prominence and the extensions of the old ones should receive immediate and active investigation by competent geologists in official capacity. This leads to another phase of the bureau's apparent lethargy. We do not know that anything is being done at this moment of particular interest to the oil industry, but at the same time we understand three men are at work in a sort of detective capacity in other and immaterial ways. What we want is investigators and not detectives.

As a matter of fact, there are but few geologists and mineralogists in the State capable of conducting the bureau as we presume the originators intended it should be conducted. There is, however, one man in our knowledge eminently fitted for this work, Charles G. Yale, at present in the employ of the government. We do not know that Mr. Yale is available, but we do not hesitate to suggest that his services would be of greater value to California than the salary attached to the office of head of the bureau. California, with its great mining industry, can not afford to neglect this important resource of the State. It can less afford to have information promulgated that is incorrect, thus defeating the objects for which the bureau was organized. Let us have additional appropriation with a mineralogist and geologist in charge of the work, in fact as well as in name.

JAPAN REQUIRES CALIFORNIA OIL.

Director of Japanese Refinery Here to Look Into the Industry.

With the object of increasing the importation of crude oil from California to Japan, I. Legawa, director-general of the Nan Boku Oil Company, which is capitalized at $5,000,000, is here to look into the output of the oil fields in this State.

The tariff imposed by Japan on the importation of crude oil is 20 per cent. Recently, to prevent an increase in the importation, the tariff was raised to fifty per cent. The company which Legawa represents and which has been in existence for only two years, fought the raise and finally secured from the Government a suspension of one year on the increase, in order to have the opportunity of demonstrating that the importation of crude oil to Japan on a large scale would be beneficial to the country.

"Japan can use 5,000,000 barrels of crude oil a year," said Mr. Legawa through an interpreter. "We are now importing from this country considerable refined oil, of which about 100,000,000 gallons is consumed yearly. Our company has recently built a plant that has a refining capacity of 1,500,000 barrels yearly. The Nan Boku Oil Company is an adjunct of the Toyo Kisen Kaisha, and we now have five tank steamers operating between Gaviota and Japanese ports. If we can prove to the Government that an increased importation of crude oil into Japan will benefit the country, the tariff will not be raised, and this will mean much for California as well."

NEW OFFICES.

The San Francisco office of the Oil Well Supply Company has been moved to 899 Monadnock Building from the warehouse at 111 Townsend Street, where it has been maintained since the fire. The present quarters are in the heart of the city and easily accessible to oil men. For a number of years the San Francisco branch has been under the management of Mr. W. W. Nellis, who is highly regarded by those with whom he has had dealings in a business way as well as by those who know him socially. It is safe for The Derrick to assume that Mr. Nellis will be pleased to greet his friends at the new headquarters as well as to meet any one who may be anticipating the purchase of oil well supplies. Even though one desires to meet Mr. Nellis only, without this idea in view, a bluff that you want to buy will immediately bring forth the admirable qualities of the gentleman, and we are quite sure that no disappointment will result. You will buy, whether you need the goods or not. Here's to Mr. Nellis' prosperity.

NATURAL GAS.

Production in 1907.

In spite of the drain on the supply of natural gas in the United States for the last fifty years and the consequent exhaustion of the natural-gas resources in many localities in western Pennsylvania, Ohio, and Indiana, the total value of the gas produced in 1907 exceeded all previous records, aggregating $52,866,835. In 1890, when the use of this fuel in factories was at its height in Ohio, Indiana, and other States, the value of the product was $18,792,725, a little over one-third of the value recorded in 1907. Of course the value per thousand feet has increased very greatly during the last seventeen years. The quantity of gas produced in 1907—404,441,254 thousand cubic feet—showed a very definite increase over the output in 1906, which amounted to 388,843,562 thousand cubic feet. Only within the last two years has an accurate record been kept of the total quantity of natural gas produced, but a comparison of these figures shows that there has been but slight increase in the average price during that period.

In an introduction to the report on the production of natural gas, published by the United States Geological Survey in Part II of "Mineral Resources of the United States, Calendar Year 1907," David T. Day says:

"The great increase in consumption of natural gas in 1907 was due chiefly to the efforts of well-established companies which are engaged in producing the gas and transporting it over exceptionally great distances. This increase is due rather to the profitable investment of local capital in this industry than to any great increase in demand, as is shown by the fact that the production of West Virginia was greatly stimulated in order to transport the gas a distance of over 200 miles to such distant points as Cleveland, Ohio, while in Louisiana the enormous gas pressures are allowing much more gas to go to waste than is utilized, although transportation of the gas from Shreveport to New Orleans would be only slightly more expensive than from the West Virginia field to Cleveland. This waste of natural gas in the Caddo field of Louisiana is the most flagrant example of the abuse of national wealth yet recorded in this industry."

The report on natural gas, which was prepared by B. Hill, presents in tabular form detailed statistics of production and consumption and discusses the condition of the industry in each of the producing States.

ALTAMONT.

Developments are going ahead rapidly in the new Altament oil fields, eight miles east of Livermore, Alameda County, where the Standard Oil Company is drilling two wells and expects to start a third on Section 27 in the near future. In the well where the Standard rig is working, a depth of over 600 feet has been attained, and it is reported that a showing of oil was struck a few days ago. This rig is right at the station of Altamont, while the rotary rig is something over two miles further east. The depth of this well is probably not over 500 feet, as some trouble has been experienced with breakdowns.

From statements made by interested parties it is believed that the Standard feels sure of the final results of drilling, and already, in anticipation of future activity, one supply concern is understood to be arranging for a depot at Altamont, so as to give quick service to those who will begin drilling soon.

An examination made this month by one of the eminent geologists of the State appears to be extremely favorable to this district. As a matter of fact, according to the consensus of the opinion of all who have examined the formation carefully, there is every reason to expect but one result, the discovery of high-grade oil.

Since the last issue of the "Derrick" the Altamont Oil Company has been organized for the purpose of developing 160 acres of the Nickerson ranch, which adjoins the first-mentioned tract of the Standard, as will be noted in another portion of the paper under the head of "new incorporations." As soon as developments in the Standard well have reached a certain stage it is understood that drilling will be started here.

Available ground is being taken up by leases for miles in each direction along and inside the formation by those who, from past experience, believe the field to stand a good show to become one of the biggest in the State. Those who are acquainted with the Eastern high-grade fields state that the formation is similar in character, possessing the large alternating bodies of shale and sandstone, which at depth almost invariably carry oil. It is anticipated that the oil will be of high-grade usually found in such character of country.

MORE ACTIVITY IN WEST SIDE OIL FIELD.

According to the Times, George O'Hara, representing San Francisco capitalists, is bonding oil lands in the neighborhood of Byron. The following options have been secured: Claus Peers, 160 acres; J. and D. Feeley, 160 acres; Frank Raffet, 160 acres; B. Nelson, 160 acres. Other tracts are being negotiated for.

There is a rumor that a company composed of Peter Moy, the well known sheep man, and a number of Alaska mining men will drill for oil on one of Mr. Moy's sections on the western slope of the San Joaquin Valley between Corral Hollow and Lone Tree Creeks.

It is understood that the Standard Oil Company will erect another rig at once on the Leonardo Place, adjoining the Johnson and Mulqueeny properties on Section 27.—Byron Times.

MINING MEN IN OIL DEAL.

Wingfield, Mackenzie and Mitchell Invest Half a Million in Coalinga.

William E. Mitchell of New York and John H. Mackenzie and George Wingfield of Goldfield, Nev., the two last named being respectively the superintendent of and an owner in the Goldfield Consolidated mines, have just closed a big oil-land deal in the Coalinga District. They have paid $525,000 for 300 acres of land, or $1,750 per acre. It is the intention of the owners to sink two wells at once and become active suppliers to the oil market on this Coast.

There is an earnest effort on foot to commemorate the semi-centennial of the discovery of petroleum in this country by Col. Edwin L. Drake by the erection of a suitable monument upon the site of the first well on the banks of Oil Creek in Venango County, near Titusville, Pa. The plan, which originated some years ago, is in care of the Canadohta Chapter of the Daughters of the American Revolution, who are using every effort to work it to successful completion. The petroleum industry in the United States has played so important a part in the development of the country that the idea of commemorating its inception in a suitable way, as well as to honor the memory of the man who was the pioneer in oil development, is indeed a worthy one and the ladies who have undertaken to see it through deserve the active support of patriotic Americans, who love their country and take a pride in its wonderful progress.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

The month of October shows a marked improvement in many ways over previous months. The fact that the production is moved from this field as fast as it is placed in the shipping tanks indicates the pull consumption has upon this field. At midnight on October 31, 1908, there was no oil on hand on the east side, and only 15,500 barrels on the west side, a reduction over September of 2,700 barrels. On December 31, 1907, midnight, there were 12,000,000 barrels, in round numbers, on hand in the Kern River field. This stock is nearly exhausted at this moment, as the great marketing concerns were forced to draw heavily on their reserves to meet the demand of consumers. In this field, on December 31, 1907, midnight, there was 55,000 barrels on hand. A careful estimate places the surplus for December 31, 1908, at about 30,000 barrels, and yet production has been increased over last year. There were shipped from Coalinga in October 1,020,000 barrels of crude oil, the total production for that month was 1,027,400 barrels. The State's production for October is estimated at 4,000,000 barrels, in round numbers. At midnight, October 31, 1908, there were forty producing wells temporarily "off the beam," and 399 wells producing, a total of 439 wells completed. There were twenty one drilling wells temporarily "off" waiting for casing, or tools, and 102 wells drilling, a total of 123 wells drilling. There was reported 50 new rigs for the month.

We are informed, by the published testimony of the Standard Oil Company's officers, who have recently testified before the courts, that the Standard Oil Company has in reserve, to meet the fluctuation of production, 185,000,000 barrels of crude oil. They also made the statement under oath that the Standard Oil Company consumed 64,000,000 barrels of crude oil in their refineries throughout the United States last year. This alone is an important stimulant for continued effort in forcing development and increasing the production for a continually growing demand.

After the new year shall have swung into line there will be an increased activity about this field and the new fields opening to the south, indications pointing to very lively times all along the oil belt. The development work will add very materially to the year's production of 1909, as to-day there are a number of wells that are about finished. The new work to the extreme south, about the El Cerrito District and the Devils Den country, will extend the field considerably. This field will, within five years, extend from Coalinga to Sunset. To-day Coalinga stands alone in point of production, and shows more activity than any field in the State.

From a careful canvass made by the Ladies' Improvement Club, it is shown that 165 buildings, completed and being built, have been added to the city the past six months. The center of the building activity has been in the Sunset Addition, the Pleasant Valley Addition, and on D and E Streets within the original survey. In Sunset Addition 45 buildings, in Pleasant Valley Addition 15, on D Street 24, and on E Street 26. The above are mostly dwellings, which range from a $700 to a $6,000 cottage. In the business part of town, the A. P. May, incorporated, on Front Street, will complete the two-story brick by January 1st; Freed Bennett added one-story brick to his saloon building, making an annex to the Coalinga Hotel on Fifth Street; the three-story and basement building of the Pleasant Valley Hotel Company has twenty-five workmen employed; the management hopes to complete the building early in the year; the grill will be first class in its appointments; the hotel will be well furnished. The A. E. Webb building on Fifth Street will be two-story brick; has the walls for the first story up. The new two-story brick building on Front Street, near Fourth Street, is progressing nicely. The Associated Supply Company completed its corrugated iron building, store and warehouse three months ago. A number of smaller dwellings have been built south of the railroad and others are now building. The steady growth of the city is quite assuring. The sewering of the town, the cement sidewalks, the new firehouse and fire apparatus, the grading and oiling of the streets through the business portion of the town, as well as the streets leading to the oil fields, will improve this city, and the added convenience of the new hotel, and Sullivan's Grill and Apartments, will increase the travel to this town by men of means, which in turn will add new development to our field.

The future of Coalinga points to an oil city of 10,000 people, a lively town of live men. To-day we number 3,500, and are just starting for the 10,000. A party of surveyors has been in the hills between here and Tres Pinos, San Benito County, for some time. There can be no other purpose than a re-survey for a railroad. Such a route would make San Francisco 100 miles nearer Los Angeles and the East, consult your map; and that road would be the Southern Pacific, we judge it, as it is the best prepared, and that would be a natural route. Very recently we met a gentleman on the train who is among the "high-ups" in the Southern Pacific, and he expressed the opinion that Coalinga would be a point of much interest in the near future. With the present conditions and the contemplated work of some new companies governed by American capital, and the English companies that will soon be in the field, leads one to infer that the party seen in the hills surveying "a wagon road" are no other than railroad surveyors, and the point of destination is Coalinga.

Our postoffice is assuming city proportions. Another order for lock boxes has been placed, in an effort to meet the demands of new firms and new developing companies. Very soon the department must provide larger quarters that the mail may be handled for the convenience of the public.

S. P. Young, of San Francisco, the man who successfully brought the old San Francisco bank, some years ago, out of its financial troubles, and who was one of the men who organized the Union Trust Company of San Francisco, arrived in town last Wednesday. Mr. Young believes this town, with the field behind it, has a future and is a good point for a national bank, and is here for that purpose. Mr. Young and his associates have received authority from the Controller of the Currency to organize the First National Bank of Coalinga, which will be capitalized at $50,000, with $10,000 surplus.

Dr. F. H. McCammon was tendered a surprise a few evenings ago, by the men employed on the Kern Trading and Oil Company property, who presented the doctor with a fine cabinet of silver, comprising spoons, knives, forks, etc., as a mark of their appreciation of his many kindly acts toward the men when sickness and accident overtook them. To those who know the doctor the action of these men was fitting and meets a sentiment that is far reaching.

The Pluto Oil Company, section 19-25-19, has completed its camp, and built a very substantial derrick. Tanks are set for water and fuel; boiler and engine are in place; a full set of Ideal rig irons are used. Spudding in of the well No. 1 will soon take place. This company is southerly from the El Cerrito well, on the same formation. The men who compose the company are well known about Coalinga, Wm. Zimmerman, local manager of the National Supply Company, is secretary of this company.

The Kern Trading and Oil Company will soon commence the work on its new office and warehouse and barns on its property, on section 5-21-15, at the point where the ball grounds were first fenced in, to accommodate the extensive business of the company. This city being the central point of business, much time will be saved by having the office in town.

At a point near the Anetto Springs, about 10 miles south of the Pluto Oil Company, a lot of rig timbers and lumber has been hauled in with 8-horse teams from Paso Robles, and a camp has been established. The men doing the work appear ignorant as to whom the work is being done for, but several ear marks about the job suggest the Union Oil Company of California.

About one-quarter of a mile northeast of the Devils Den Consolidated Oil Company, which is on section 23-25-18, another new camp has been started. Two 8 mule teams left town a few days ago for that point with rig timbers and lumber. Reports on the street suggest that Mr. Lamberson, et als., of Visalia, are the parties in interest in this new company.

Wm. Forstner, geologist, and Mr. Fellows, special agent, both men are representing the General Land Office, left for McKittrick last Wednesday, to again take up the work in that field among the homesteaders and scrippers, whose locations are being investigated by the Government.

J. M. Wright, manager and large owner in the Peerless Oil Company, was in town last week. Mr. Wright is one of the pioneers in the business and has some very productive properties in this field as well as in Kern River field.

The Camwell Oil Syndicate, section 22-19-15, has well No. 4 1,040 feet deep with 12½-inch casing; well No. 5 is 1,100 feet deep with 12½-inch casing. The superintendent, Arthur Chamberline, is anxious to get the 12½-inch landed in one of the wells by December 25th.

The Kern Trading and Oil Company, section 25-20-15, is bringing in a fine well on the north line, No. 20. The well was flowing through the easing Tuesday last.

J. W. Pauson, after a rest at the springs in this State, came in town Wednesday to look over the several interests he controls in this field.

The British Consolidated Oil Corporation, Limited, on section 12-20-14, is spudding in on well No. 5.

The New San Francisco Crude Oil Company, section 6-20-15, is making ready to drill another well.

The St. Clair Oil Company, section 12-20-14. has contracted with Marve Corey to drill the new well.

The W. K. Oil Company, section 2-20-15, is rigging up on well No. 4.

SANTA MARIA.

The year 1908 has seen the greatest activity in development work of any in the history of the Santa Maria field. Not only has there been a substantial increase in production, but the prospects for a continuance of the yield for several years to come, has encouraged oil men to their greatest efforts toward an increased production. Below is a summary of the operations in this field for the year 1908:

Wells begun in 1908	**53**
Finished in 1908	**13**
Drilling, December 15, 1908	**39**
Abandoned	**1**
1907 wells finished 1908	**13**

Of the above drilling wells at present writing, eleven are in the new or Cat Canyon part of the field.

Fifty or more members of the San Francisco Chamber of Commerce paid a visit to the Santa Maria field on Sunday, December 13th. The party was met at Santa Maria by the local Chamber and escorted through the entire field in automobiles. Oil men are greatly pleased by the interest shown by the visitors and it is hoped that much good in a business way may result from the visit.

Snook Well No. 1. 425 Bbls. Daily, Sunset.

Radium No. 1, situated at the extreme northern end of the field and adjoining the Brookshire and Union (Hartnell) properties, has been on the pump for about a week and the results are very gratifying to the management and stockholders. This well has met with more bad drilling luck than half a dozen ordinary wells and Mr. Atkinson is to be congratulated on its successful completion. Good luck to No. 2.

The Foxen Oil Company well which has been shut down, owing to a change of management, is about to begin operations again. This well, if successfully finished, will "prove" most of the property in the new part of the field as it is situated at the most eastern point of operations.

The Pinal Oil Company is maintaining its policy of development. Rigs No. 25 and 26 have been erected during the last month and No. 25 has already commenced drilling. This company is also deepening some of its old wells.

West Huasna No. 1, which has been experiencing a bad "casing job," is going along smoothly again and from the showing of oil and gas, appears to have excellent prospects of being a good producer.

The stockholders of the Hall and Hall Oil Company, who are dissatisfied with the management of the company by the National Supply Company, recently held a meeting and engaged an auditor to examine the books of the concern and report to them the exact status of the company. This lease has two producing wells and was at work drilling when operations were suspended by the action of the National Supply Company, in its attempt to collect a bill.

The Brooks is down over 700 feet with 12½-inch casing.

The Henderson is making very rapid progress, having reached below the 1,000-foot mark this week, with 12½-inch easing.

No. 2 Palmer, on the Blochman Ranch, is down 1,400 feet. The formation is very much like No. 1 and it is expected that this well will become a great producer like No. 1.

The Stendell drill has reached a depth of 2,950 feet and is in good oil sand. With reasonable good luck this well should soon become a joy to the stockholders.

The Associated Company has commenced to take the oil from the Palmer Company on its contract. The pumps on the pipe line were started the last of the week. In the first four days they took twenty thousand barrels of the very heavy oil that had been standing in the tanks for several months. As soon as this oil has been disposed of the Associated will begin to take the oil direct from the wells.

Loma Vista, Sunset, Came in a Gusher Nov. 14

SUNSET.

In the Sunset district developments are coming thick and fast, several deals for the sale and for leases on oil ground having been made at good prices.

The principal deal was that for the holdings of the Stratton Oil Company, 40 acres, the property passing to Los Angeles parties for a reported consideration of $60,000, at the rate of $1,500 per acre. The property had one well drilled a number of years ago, and permitted to sand up. It is understood that the new owners are now cleaning out the well, which is said to have flowed several thousands of barrels daily until it sanded up, since which time nothing has been done with it.

Maricopa 65,000 Bbl. Reservoir, Sunset.

The La Blanc Oil Company, under B. M. Howe's management, is down over 700 feet. Of late the formation has changed in such a manner as to warrant the expectation of getting oil at a more shallow depth than was originally anticipated. This judgment was formed from the logs of other wells passing through similar formation.

The Essex is reported to have reached a depth of something over 400 feet. This is in the same territory as the La Blanc, and it is presumed will reach the oil sands at approximately the same depth. San Francisco people are interested in this lease.

The Broncho Company, a new organization with a lease on the northwest quarter of section 8, will shortly start drilling, as most

of the equipment is now on the ground. Charles Reynolds, of Coalinga, will have charge of the work.

The Sunset Monarch expects shortly to bring in a new well on the southwest quarter of section 7.

The New Center well, recently brought in, is reported to be a good one, with probability of increase rather than a falling off, as the well is placed in shape.

The Snook has started a third well, the second well which came in having proved to be a large producer, fully as good as the original one, which was one of the best in the district.

The Anaconda is running two strings of tools besides the drilling on the northern well.

The Mohawk Sunset will start up within the next few weeks.

It is stated by those in close touch with the Loma Vista well, which came in a gusher, that it will make one of the best yet drilled in Sunset. It is already proving to be a steady producer of two grades of oil. A second rig is being erected.

The Fulton Oil Company will soon have another rig up near the Loma Vista. John M. Wright, manager of the company, was recently at the property, to be present at a test of the air compressor being installed. Mr. Wright anticipates increasing the capacity of the well, which will be maintained at 1,000 barrels daily, with a strong possibility of doubling that amount. He believes that 30,000 barrels monthly will be a conservative estimate. The Fulton will shortly enter the dividend-paying list, and remain there for a long time, a condition assured by the careful management which is responsible for the success thus far of the company.

Several carloads of material have been taken to the lease recently acquired by Rice Ranch people on 720 acres of ground in section 25 and 34. It is understood to be the intention of the operators to start five wells as soon as possible, two immediately. The discovery of oil in this portion will widen the proved ground for at least a mile to the east.

Operations were started on the Lady Washington during the early part of the month. The well is already down over 500 feet and will be deepened as fast as possible to the oil sands.

It is reported that the Union Oil Company, of California, is about to enter the field of marketing the lower grades of oil more aggressively than heretofore and that it is in the market for contracts with a view of piping from interior points to the seaboard. As corroborative evidence is the lease by the Union of the holdings of the Sunset Road Oil Company, at Sunset. These holdings comprise something over 6,000 acres and the production at this time is well up in the thousands of barrels daily. While this company stands to-day as one of the largest producers of low gravity oil the development of the vast territory will increase it many times. The lease also includes the refinery at Hazleton, in the Sunset district.

MIDWAY.

During the latter part of November the Fairbanks, under the management of Ben Stroud, penetrated the oil sands at a depth of nearly 1,300 feet. The property is the northwest forty of section 23.

In section 25 the B. H. C. is about to drill eight wells, and drilling has already been begun on the first one with rig up for the second. It is expected that the oil will be reached at about 1,100 feet.

The Safe well, in the same section, is down 1,000 feet on the second well, and it will be but a short time before the oil sand is reached. The first well is a profitable one.

Adjoining the Safe, eight acres were sold recently by Barlow & Hill, of Bakersfield, for a consideration reported to be $3,000 per acre, the purchasers being Los Angeles people.

The Western Crude Oil Company, composed of Messrs. Wilson and Wheat and Gordon, of Los Angeles, is arranging to drill a number of wells on section 4. This property is a consolidation of various interests, and consists of 160 acres of ground.

LOS ANGELES.

The meeting of the local producers for the purpose of organizing into an Agency or Association for mutual protection has been postponed. Whether an organization is ever perfected is a question. Those who have watched similar efforts in the past and noted the failure of every effort are skeptical. It might be possible for the Salt Lake, Fullerton and Whittier producers to get together, but the interests of operators in the old Los Angeles field seem so diversified that union seems out of the question, and they will very likely go on as they have in the past, competing with one another, receiving less for their oil than they should and permitting the large marketing concerns to walk off with the big contracts, which they might probably be able to handle were they united. The output of the old city field is about 50,000 barrels per month, which, if handled as a whole, could take care of some pretty good contracts.

The withdrawal of the Central Oil Company from the project was rather in the nature of a "wet blanket," but even the Central is not necessary to the success of the scheme. In fact there was general surprise when the Central sent a representative to the initial meetings. The Central Oil Company is an organization "sufficient unto itself" anyway, and its managers seem well satisfied that it does not need the assistance of any other concern. And it probably does not. It produces a high grade oil, excellent for refining; it owns its own pipe lines to the railroad from its wells, and secures a better price than the producers of heavy fuel oil, so "what's the use." Anyway, it seems probable that the proposed Agency "del sur" will be obliged to get along without the Central.

La Blanc Oil Company, Loma Vista 700 Yards West. Sunset.

It seems probable that hereafter more attention is to be given the production of asphalt by the local refiners. The opinion seems to prevail that now is an opportune time to make some effort before the Congress Committee on tariff revision to secure a tariff on the imported article which the Asphalt Trust can not evade as it does the present one, much to the disadvantage of California manufacturers. It is probable

that the latter will be represented before the committee when the subject is up. Mr. Dunham's article on the subject of asphalt last month showed the possibilities of the business and it is conceded that California oil can produce the best asphalt in the world if properly treated. It is believed that something tangible will be accomplished and that California asphalt will take its proper place in the markets of the country.

Essex Oil Company, Sunset.

Some of our timid oil men think they see the over-production ghost stalking abroad down around here. This is an awful defect of vision and is caused no doubt because in the Southern fields at present about 150,000 barrels per month is produced in excess of the amount required by the local markets. It is estimated that the present output of the Salt Lake field is about 400,000 barrels per month. The local markets require about 300,000 barrels. But this fact need cause no fear. To those familiar with general conditions this causes no worry. Where the general demand is so large as it is at present and constantly increasing, a local condition such as exists here loses its force. Matters are equalized in the averages. For instance, in order to allay the fears of the aforesaid timid ones, it may be said that the Union and the Associated are both shipping local oil—about 125,000 barrels every month—from the ports of San Pedro and Redondo. Some of this oil is taken north to Oregon and Washington points and some is sent abroad. It may be further noted that at Redondo preparations are being made whereby the large Japanese tankers engaged in the Japanese oil carrying trade will be able to load there instead of at Gaviota as at present. To a man with only one eye open, it certainly looks like anything but overproduction, although, of course, it must be conceded that in some of the fields production is increasing. But even at that the demand both for fuel for refining purposes and for the manufacture of asphalt is bound to also increase, and as everybody knows the matter of increasing the output in the California fields is not a matter of a few weeks only, or few months either. The wonderful impetus given the business about a year ago, when the present intense activity commenced, is only now beginning to be noted so far as increased production is concerned. When one considers the amount of drilling which has been going on all this time and the so far apparent meager returns, all ideas of an overproduction—immediately, at least—are effectually knocked out of his head. The fact is, and the well informed recognize it, the oil business has not had so bright an outlook since the discovery of oil on this coast. Everything points to continued prosperity. The markets are in excellent condition and prices are firm, with an upward tendency if anything. The present is the time to get into the oil business, without question, if one wants a money making investment.

SALT LAKE FIELD.

There is no let-up in activity in the local field and although the output has not increased materially the past month, no less strenuous efforts have been made to get more oil. And a number of new wells have been brought in, too. No gushers but good wells as is general in the older portions of the field, but the natural decline in old wells has nearly offset the new production. The numerous wells drilling around on the edges, particularly toward the west from Sherman Junction, in the neighborhood of Beverly Hills, have none of them been finished, but several are due within the next two or three weeks.

Drilling toward the east, where both the Brea Ranch and Associated companies have been operating, has been suspended —temporarily at least—owing to small results. The field has been extended in this direction toward the old city field probably a mile and a half. The territory is shallow—not over 1,800 feet—and the wells secured started off at from 75 to 100 barrels, settling down into about 50-barrel producers. The wells became smaller, however, as drilling proceeded eastward and the last tier of wells were well nigh failures, so drilling was stopped and the tools moved to more prolific territory which is owned by both these companies, in other sections of the field.

Two wells which are being watched with considerable interest are those being drilled by the Pacific Light and Power Company and by A. F. Gilmore. The former is located about one and one-half miles north of present developments, and will extend the field in that direction by that much if the oil sand is found. Some trouble was experienced with a rotary rig, with which the hole was started, and a standard has now been installed and work is proceeding satisfactorily at about 1,400 feet. The wells nearest to this location are from 1,800 to 2,200 feet in depth. The Gilmore well is located on the extreme western line of his property adjoining the Stephens' Tract on which the Union is now drilling, and is also located farther to the north than any other well in this neighborhood. The hole is now down 1,800 feet, but there is as yet no showing. It is believed by many that the limits of the field toward the north and south have been reached and that any further extension will be to the west and southwest. To the south the producing area is believed to have reached its limits on the Pitcher & Garbutt lease of the Union Oil Company, where a number of very deep holes have been drilled, ranging from 3,000 to 4,100 feet in depth, with only fair wells as the result. One well at 3,600 feet finished about three years ago was a gusher, and for several weeks flowed at a tremendous rate, but this well was recently reported as doing only about 75 barrels per day. The well 4,100 feet deep was drilled about one-quarter of a mile southeast from this location and nothing was found. About a mile due south of this point the N. D. H. Oil Co. is putting down a well but are only about 400 feet deep and little faith is expressed by those familiar with conditions that the company will meet with success.

In the neighborhood of Sherman Junction as usual and around the town of Beverly, about five miles west, the greatest activity now prevails in the way of new work. The rotary rig is becoming quite a factor in operations in this section of the field when conditions seem to be favorable, and there are a number of them at work and good time is being made with them.

The Associated has just finished up its second well with a rotary, not far from the original strike near Beverly, which started the excitement there. The depth and initial output has not yet been reported but it is said the water was effectually shut off and a good producer is expected.

OIL IS KING

Oil is the greatest money-making industry in California. The investing public is about to wake up to a realization of that fact.

Thirty-three (33) out of fifty-eight (58) listed oil stocks are on a dividend-paying basis. Many unlisted California oil stocks are paying big dividends. Many new oil companies will soon commence paying dividends.

Last year oil was most valuable of California's mineral products. This will be increased this year, and for many years to come.

We have men associated with us who have spent ten (10) years in the oil fields of California. With their aid we are publishing the OIL BOOK, which contains full information of the various oil fields and oil companies. We have also published a little booklet, giving the history of the oil industry.

We handle all good California oil stocks, and can tell you how best to invest in these companies. Whether you want to invest in ten (10) or ten thousand (10,000) dollars, we can surely be of assistance to you.

We advised the purchase of Templor Ranch at ten (10) cents per share, now worth twenty (20) cents; San Francisco and McKittrick at thirteen (13) dollars, now worth twenty (20) dollars; Monte Christo at ninety-five (95) cents, now worth one dollar and ninety-five cents ($1.95).

We sell good oil stocks for cash, or easy monthly payments.

Call at our office for information about any company in which you may be interested, and receive a free copy of the OIL BOOK. Come and see the samples of oil and study the maps of the different districts. If you cannot conveniently call, fill out the coupon in the corner and we will send you, prepaid, a copy of the OIL BOOK and a beautiful panorama view of the Oil Fields. At the present time we know of three (3) Oil Companies whose stock should double within the next sixty (60) days. Now is the time for you to investigate the oil business. Call at our office, or fill out the coupon in the corner and mail it to us today.

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City _____

Marketing conditions here are in a satisfactory condition. Two pipe lines and a railroad connect the field with the markets and no difficulty is encountered in handling the product. All the ore produced in the Salt Lake field is either used by the parties producing it, such as the Pacific Light and Power Company and the Los Angeles Pacific Railway Company, or is all contracted for by either the Union or Associated. The price therefore is stationary and there is no indication that there will be an immediate movement in either direction. There are several large contracts, it is said, which will expire shortly after the first of the year, and whether they will be renewed at the same price can not he stated. It is reasonable to believe, from general conditions, that a slight advance might be made.

Whether the Standard is figuring on coming into the Southern markets as a buyer of oil, is still a question of interest. The large storage tanks being built by the company at San Pedro are certainly not for water, and it is believed that the big concern is making preparations to do business south of the Tehachapi, a locality to which it has not heretofore paid much attention.

The several wildcats going down in various sections down this way have not yet flooded the market. At Sawtelle, Clampett Bros. & Co. have not startled the oil world with a gusher. The hole is 2,200 feet deep and as yet there is "nothing doing." The well on the Bixby Ranch, near San Pedro, has reported several seepages at different depths but at 1,800 feet has yet encountered no oil sand. The Balboa well at Newport found what it thought was an oil strike, but it was no more than a gas blowout. At the present depth, 2,800 feet, it begins to look doubtful. The Kellerman well, not far distant, is in about the same candition. Several wildcats are going down in different localities in Ventura County, but it is not believed Ventura County has any big territory. Its history shows small wells, and whether or not these prospect holes are successful, production will not be increased to any great extent. The hills of Ventura County are, in fact, full of oil and have been producing for twenty-five years, but there has never been a large field opened up there and there probably never will, owing to the broken character of the formation. So it is believed that the southern part of the State has been fairly well prospected and the real productive districts fairly well defined. The prediction made by the Times recently is likely correct, that oil men will eventually be obliged to look to the great San Joaquin Valley for the bulk of the petroleum to be produced in this State.

Lady Washington, Sunset.

FULLERTON.

Here is one of the fields that for the next two years at least will be looked to, to help furnish the oil to supply the increased and increasing demand. Oil men will soon wake up to the fact that this is one of the best fields in the State and seems destined to be one of the largest. Fullerton is a field of big producers. There is no richer oil sand in the State than is found here. The territory is deep, the drilling is difficult, and the land is mostly in the hands of large strong concerns which seem to think "it is better to be sure than sorry." They get excellent results, but it requires time, and the output of the field does not increase as rapidly as it could be made to. In fact, the operators here can about regulate their supply to the immediate demand.

The field is being extended toward the west rapidiy and is now practically one with Brea Canyon. But it is being developed beyond this point. The Fullerton Oil Company and the Orange Oil Company are both drilling nearly a mile west of the Canyon, and the latter company's No. 1 here is one of the best wells in the field, and their No. 2, which will be finished in a few days, is showing up just as well as No. 1. These operations are pointing directly toward the old Puente field, about five miles in advance, and there is no question but that they will be connected in a comparatively short time. W. B. Scott and associates have secured a piece of land west of the Orange and are making preparations to drill.

In this section of the field the product is of a much higher grade than that in the older Fullerton field near Olinda Station, and is especially good for refining purposes, and for that reason commands a much better price.

In the older field the territory is also being broadened gradually toward the South. The Fullerton Consolidated Oil Company is gradually reaching south and is getting good wells. The dip of the strata is south, but the pitch is less than supposed, or it flattens out. If the latter be true another Coalinga will be opened up. The possibilities are immense.

MENDOCINO COUNTY.

The John D. Oil Company, at Point Arena, is down about 1,000 feet in its well. The company is operating with a Standard rig, and expects to go at least 200 feet deeper before reaching the oil sands. The formation is similar to that of the Santa Maria fields, although not nearly so deep. The company already has a good showing of oil, according to late reports. There are 200 acres in the tract to be developed. Those interested in the company are J. Mader, A. Hollenbeck, John D. Hicks, and E. Bush, of Fresno.

Buy La Blanc Oil Stock

At 15c a Share Before the advance. Actively drilling with double crews (working "Tower") and down over 700 feet with casing in. Location, Sec. 6-11-23, Sunset Oil District, Maricopa, Kern County, California. Territory now PROVEN since the Loma Vista "came in" but 700 yards southwest of us. Low capitalization, practical management, the "square deal." See your broker at once, or call or write direct to Company for further particulars. Thirty days maybe, and sixty days from now will be TOO LATE.

LA BLANC OIL COMPANY

John La Blanc, President
Mark E. Davis, Secretary

1004 Broadway, Oakland, California
Telephone Oakland 7149

MONTHLY STATEMENT OF DIVIDENDS PAID BY OIL COMPANIES LISTED ON THE CALIFORNIA STOCK AND OIL EXCHANGE. TO OCTOBER 31, 1908.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	9-22-08	.03	11,400.00	$ 136,800.00
Amalgamated	11-10-08	1.00	50,000.00	800,000.00
Apollo	3-20-05	.01	2,000.00	4,000.00
Associated	3-1-07	1.50	420,000.00	1,522,309.39
Brookshire	11-1-08	.02	10,000.00	322,500.00
Caribou	11-15-08	.25	20,175.75	377,719.74
Chicago Crude	3-25-07	½c	5,000.00	15,000.00
Claremont	11-15-08	.01	4,500.00	197,000.00
Coalinga Pacific	11-25-08	.07	4,550.00	39,000.00
Columbia	11-25-08	.01	9,992.66	154,885.64
Esperanza	11-25-08	.01	1,600.00	20,650.00
Euclid	11-1-08	.01	3,500.00	68,000.00
Four	10-25-08	.01	3,000.00	186,000.00
Globe	10-1-08	.01	6,000.00	51,000.00
Hanford	1-20-06	2.00	4,000.00	80,000.00
Home	11-14-08	.02	2,000.00	442,000.00
Homestake	10-1-08	.10	1,000.00	69,250.00
Illinois Crude	11-1-08	.01	2,000.00	48,000.00
Imperial	10-6-08	.60	60,000.00	1,640,000.00
Junction	11-1-08	.01	2,500.00	2,500.00
Kern River	11-4-08	.10	2,000.00	92,000.00
Linda Vista	10-7-08	.01	3,838.50	26,869.50
Lucile	11-5-08	.10	2,670.40	8,011.20
Monte Cristo	8-10-07	.01	5,000.00	265,000.00
Nevada County	10-13-08	.04	10,000.00	40,000.00
Peerless	11-20-08	.06	6,000.00	741,000.00
Piedmont	11-7-08	.01	3,890.00	11,317.30
Pinal	11-5-08	.15	22,500.00	594,841.00
Pittsburg	11-11-07	.24½	58,800.00	124,800.00
Reed Crude	11-08	.06	6,000.00	1,107,000.00
Rice Ranch	8-20-07	.03	9,000.00	69,000.00
Royalty	11-10-08	.01	200.00	200.00
S. F. McKittrick	11-1-08	.30	15,000.00	75,000.00
Sauer Dough	11-1-08	.05	9,975.00	329,175.00
Sovereign	9-30-08	.01	5,000.00	65,000.00
Sterling	9-15-08	.10	25,000.00	247,000.00
Superior	10-20-08	.01	5,000.00	30,000.00
S. W. & B.	11-1-08	.04	15,080.00	15,080.00
Thirty Three	4-6-07	.30	30,000.00	640,000.00
Union	11-20-08	.50	117,711.00	4,420,961.15
United	11-20-08	.50	40,375.50	1,532,951.93
Wabash	11-20-08	.02	6,000.00	72,000.00
West Shore	10-15-08	.10	10,000.00	225,000.00
Western Union	12-15-07	2.00	20,000.00	484,951.00

Total Dividends Paid to Date $17,393,772.85

Total Dividends paid by the above companies for November, $358,220.21, and to date in December, over $600,000.

LATEST QUOTATIONS

	Bid.	Asked.
Associated Oil	$38.25	$38.50
Brookshire	1.25	
Caribou		13.00
Claremont		1.70
Coalinga Pacific		5.00
Daisy	.30	
Esperanza	1.50	1.55
Euclid	.50	
Four	.30	
Fulton	1.75	
Gipsy		.29
Illinois Crude		.30
Junction	.70	
Kern	.20	
Kern River	8.75	
Linda Vista	.40	
Lucile	9.50	
McKittrick	.29	.40
Monte Cristo		2.00
Occidental	.25	
Peerless	4.50	5.00
Producers'		2.65
Rico	.90	1.75
Royalty	2.00	
S. F. & McKittrick	20.00	
Sauer Dough		2.20
Section 25	12.50	14.00
Sovereign	.25	.29
S. W. & B.	.35	
Sterling	4.50	4.60
Sunset Monarch	.60	.92
Superior	.20	
Thirty-Three	2.05	
Wabash	1.30	1.40
Wolverine	.25	
W. K. Oil Co	1.35	

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THE AMERICAN DUCHESS OIL CO. has wells producing the highest grade refining oil of the world; 3 drilling rigs; 10,000 feet of casing; tools; machinery; machine shop; pumping plant; electric light plant; camp outfit; proven land; proven competent management; combines safety of investment with certainty of profit. More wells to be drilled without delay. Small block of treasury stock at SPECIAL LOW PRICE. Facts on request.

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See Harper's Weekly, Oct. 3, 1908

Patent Serial No. 450,294 August 25th

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The Geographical Distribution and Geological Occurrence of Petroleum and Natural Gas: the Physical and Chemical Properties, Production and Refining of Petroleum and Ozokerite; the Characters and Uses, Testing, Transport and Storage of Petroleum Products, and the Legislative Enactments relating thereto, together with a description of the Shale Oil and Allied Industries and a full Bibliography.

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311 Metropolis Bank Building, San Francisco, Cal.

Follow the Lead of Those Who Are Successful

Have you familiarized yourself with the developments of the California oil fields and the fortunes being made by the wise investor? Do you know that the production of the State for the year will exceed 45,000,000 barrels, with a value greater than the gold production? Have you investigated the exceptional opportunity for sound, legitimate investment with experienced oil men, who have backed up their knowledge and faith by large investments of their own money?

There are oil companies operating in the State of California which have paid dividends equal to the par value of their capitalization during the past five years. We believe there is no industry that can show such a record. There are dozens of companies paying from 12% to 40% a year. There are instances of an investment of $100 accruing a fortune.

Small Investments Have Created Great Fortunes

The last quarterly statement of the California Stock and Oil Exchange showed a sum of over $2,780,000 paid in dividends by *listed* companies during that period of time, or a total of over $17,000,000 to December 1st. The total paid by *unlisted* companies may, and probably does exceed this amount.

At least a dozen millionaires have become so by an investment of a few dollars in California oil stock. Jno. Bunting, once a freight brakeman, borrowed a few dollars to make his first investment. Today he rides his private car over the same railway. Chanslor and Canfield gathered sage brush with their own hands to fire the boiler for drilling their first well. On "tag day," last month, they were distributing $100 greenbacks for the benefit of the children's hospital. They are known as multi-millionaires. The Union Oil Company profited nearly a million dollars from the production of one well. Several oil stocks have advanced from a few cents to above $100 a share. These are but illustrations—many a man and woman has passed from ordinary circumstances to positions of apparent affluence by a judicious investment in a new oil field.

Altamont Oil Company

The Altamont Oil Company is the owner of a perpetual lease on 160 acres of land lying directly in between two drilling operations in the Altamont, Alameda County, California, oil field. One well is being drilled within 100 yards of our west line. The other is being drilled within 1,800 yards of our southeast corner. If either of these operations strikes oil, our property, as you can see, will become very valuable. In event both operations strike oil, it will then become even more valuable. In event a gusher is struck in either of these operations, it becomes valuable almost beyond estimation, and our stockholders' stock in proportion.

These two well-drilling operations are "just commencing." They are running a race to the oil. One is a standard rig. The other is a rotary rig. Thousands of people are watching the contest. If oil is struck, the profit is great, and only a short time tells the tale.

A third well will soon be begun about 2,000 feet southeast of us, other extensive development being contemplated.

The report of a competent geologist points to the probable fact that our property is even more favorably located than that of the Standard Oil Company surrounding us. We have a first issue of 50,000 shares at 20 cents a share. The next allotment will probably be sold at greatly advanced prices.

Procrastination the Thief of Time

Do not delay if you wish to secure a block of this twenty-cent stock. We are the exclusive agents for the Altamont Oil Company, but each block of 50,000 shares will be advanced in price as development proceeds. We reserve the right to withdraw all or any part of the issue at any time without notice. If your order is not placed before tthe first oil is struck it means a lost opportunity to you—a fortune lost. The man or woman who acts quickly will have acquired a fortune even from a small investment.

Send in your order today. Do not delay. Telegraph your reservation, if you like, and follow with remittance. Arrangements for payment by installments, if desired.

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., January, 1909 No. 11

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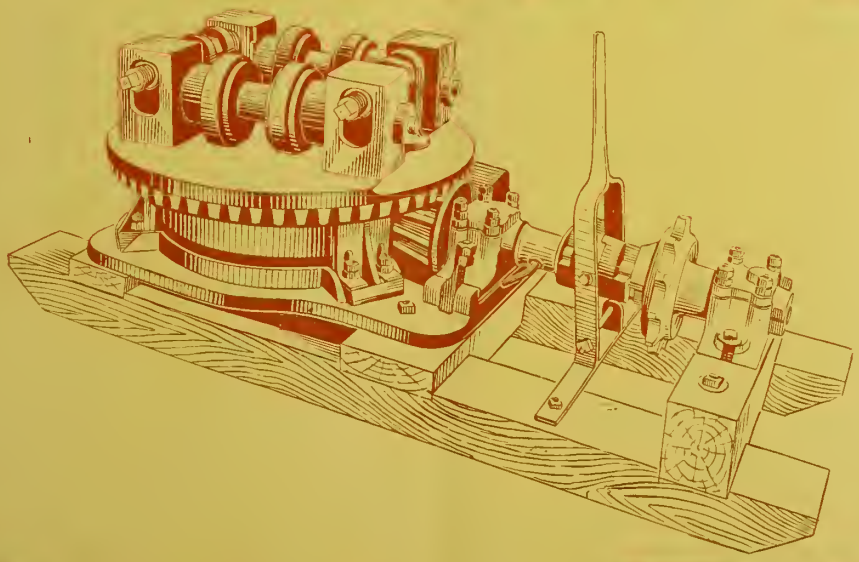

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., January, 1909 No. 11

CALIFORNIA IN FIRST PLACE

California is now at the head of the list of oil-producing sections of the world, both in quantity and in value of the product of oil. Last year approximately 48,000,000 barrels of oil were produced, worth upwards of $23,000,000. The next nearest competitor of the United States was the Mid-Continent field, with a production of 46,150,000 barrels, with a considerably less value than California.

According to all indications, this State will distance all competitors for 1909. The vast amount of work begun last year, the results of which will accrue during the first few months of this year and the new work planned this year, the fruition of which will accrue before 1910, presages an unparalleled production. It would not be surprising if nearly 60,000,000 barrels of oil were produced in 1909, worth close to $40,000,000, with a possibility of even greater values.

The advancing prices of oil in 1908 and the continuing insistent demand for all grades of the product this year, promise to make 1909 a record-breaking year. The large deals for undeveloped proved territory, will mean the expenditure of millions of dollars. The work in the new districts where oil has not yet been found in paying quantities, will undoubtedly prove up some productive sections. This new work is being done principally by the Standard Oil Company, which is spending hundreds of thousands of dollars to demonstrate the existence of refining oil, the crying need of that big company, in order to supply its demands.

The tendency of correspondents and oil papers is, generally speaking, to mention discouragingly all efforts to open up new territory, and hence, as the Standard pays no attention to such things but goes right ahead, practically all the new fields to be found will be under Standard control, and we will then criticise the Standard for reaping the results of its own hardihood. New operations should be encouraged, and to new operations in future lies the history of California as an oil State, although the old fields will not be exhausted for many years to come; in fact, some of them will be producing a century from now.

Coalinga has forged to first place during the past year. Kern River has dropped to second, with Santa Maria third, and probably second ere the year passes. Sunset-Midway-McKittrick will increase its production in greater proportion than any other field of the State. From hundreds of thousands of barrels in 1908, unless all signs fail, it will reach into the millions in 1909.

The most interesting feature of all will be the dividend record for this year, and it is not at all improbable that it will reach $15,000,000. Last year it approached $9,000,000. Practically the entire advance in price is clear profit to producers, hence the increase in dividends should be much greater in proportion than the increase in production.

The foreign market in 1909 will be developed to a greater extent than ever before, and it is entirely possible that even in England and Europe a new market will be developed, especially for the refined product, as one important refinery deal is undoubtedly under way, which will bring much new British capital here.

It can safely be said that 1909 will be a record-breaking year in all respects for California oil, and that, unless some startling discoveries are made elsewhere, California will be millions of barrels ahead of all competing fields in point of production.

ON THE PROPERTIES OF JAPANESE PETROLEUM

By K. Kobayashi.
Translation revised by H. N. Cooper.

It is with much pleasure that the CALIFORNIA DERRICK begins in this issue a series of articles on Japanese petroleum by K. Kobayashi, an author of note in Japan and one of the best posted oil men in the world. Mr. Kobayashi is a graduate of the Imperial University of Japan and is a prominent oil chemist, now connected with the Hoden Oil Company of Echigo, Japan.

There are several localities in Japan where petroleum has been found, but the most important territory is the Province of Echigo, situated on the northern coast of Japan. There are five principal groups of oil fields in Echigo:

(1) The Higashiyama field.
(2) The Nishiyama field.
(3) The Niitsu field.
(4) The Kubiki field.
(5) The Ojiya field.

The Higashiyama field comprises the wells of Katsubo, Hirei, and Urase. The field was discovered in 1890, and the output in 1907 was about 376,111 barrels. Now the field produces about 30,000 barrels a month. The Nishiyama field comprises the wells of Kamada and Nagamine. This oil field was discovered in 1897. The output in 1907 was about 428,656 barrels. The Niitsu oil field comprises the wells of Koguchi and Kumazawa. The presence of petroleum in the field was noted at an early date, but its drilling has been undertaken only a few years ago. The output in 1907 was about 1,117,700 barrels. There are about 200 wells with the modern American drilling system, and also many wells with a simple drilling system called "Kazusahori." The monthly output is about 100,000 barrels at present. The Kubiki oil field comprises Kitano, Hara, Kurashita, and many other districts. Since the oils from the different wells of this section vary considerably in specific gravity, etc., it is important to examine these oils separately. I have examined two varieties of these oils—Kitano and Hara. The output in 1907 was about 81,000 barrels. There are now only about 100 wells, and the monthly output does not reach 100,000 barrels, but this field is considered promising. The Ojiya field was discovered quite recently. The production is not so great as from the Kitano field, but undoubtedly this field will he one of the most promising in the future. The oil from the field is characterized by containing a considerable quantity of lighter fractions.

The following table shows the production of each field:

District.	1903.	1904.	1905.	1906.	1907.
Niitsu field	356,960	600,369	732,870	912,777	1.117,704
Nishiyama field..	348,442	331,838	314,509	567,463	428,656
Higashiyama field	380,474	369,548	308,882	345,565	376,111
Kubiki field	103,767	81,039	110,812	90,149	81,720
Ojiya field	20,545	21,378	16,031	16,740	8,747
Total.....	1,210,188	1,404,170	1,483,104	1,933,549	2,012,938

(These statistics do not contain the production of other smaller oil fields.)

The following tahle shows the specific gravities and colors of the crude oils from the various localities:

Higashiyama—		
Katsubo	.837	Dark brown
Urase	.884	Dark brown
Hirei	.868	Dark brown
Nishiyama—		
Kamada	.895	Greenish hlack
Nagamine	.889	Greenish black
Niitsu—		
Kumazawa	.942	Reddish brown
Koguchi	.942	Reddish brown
Kubiki—		
Kitano	.871	Blackish brown
Hara	.817	Light brown
Kurashita	.801	Light brown
Ojiya—		
Tokimizu	.800	Amber

The locations of the oil fields are shown in Plate I. Their geological structure is now being studied by our government geologists. Mr. Lyman has given a detailed description of the principal wells lying in the province of Echigo in his "Geological Survey of Japan." But unfortunately his survey was conducted some thirty years ago, and consequently there is no description of the new oil fields.

NOTE—The writer desires to express his appreciation of the assistance rendered him in compiling these articles by Mr. H. N. Cooper, Chemist, of Berkeley, California; Prof. T. Takamatsu, Prof. Y. Kawakita, Mr. M. Tsuzimoto, Oil Chemist of Japanese Government Experimental Station; Mr. Kond, Superintendent Nauboku Oil Company, Mr. T. Tashiro, Chemist Hoden Oil Company, of Japan.

The Higashiyama Petroleum.

In the Higashiyama oil field the three principal oil-producing districts are as follows, in order of productivity: Katsubo, Hirei, and Urase. I have examined Katsubo petroleum. The oil is of a very dark hrown color and has a somewhat offensive smell. Its specific gravity is .8971 at 15.5° C. The oil was subjected to fractional distillation, each fraction being one-tenth of the crude oil by volume, and the density of each of the distillates was determined. The following are the results obtained:

No. of Fraction	Specific Gravity at 15.5°C
1st product	.7663
2d product	.7893
3d product	.8165
4th product	.8459
5th product	.8692
6th product	.8753
7th product	.8850
8th product	.8904
9th product	.9135

By fractional distillation, referring to boiling point, the following results were obtained:

Fractions	Per Cent.	Sp. G.
Under 150° C.....	16.0	.7713
150° to 200°.....	12.2	.8180
200° to 250°.....	9.8	.8421
250° to 300°.....	14.0	....
Above 300°	48.0	....

When the fraction under 150° C. was redistilled, it gave the following percentages: Under 70°, .4%; 70 to 80, .5%; 80 to 90, .5%; 90 to 100, .8%; 100 to 110, .8%; 110 to 120, 2.8%; 120 to 130, 4.2%; 130 to 140, 2.4%; 140 to 150, 3.2%; above 150, .4%.

The oil contains .343% sulphur and .319% nitrogen. The sulphur estimation was carried out by oxidizing the sulphur by concentrated nitric acid in an assay flask and finally determining it as barium sulphate. The nitrogen estimation was carried out by Kjeldahl's method. The iodine absorption value by Huhle's method was 9.909. The oil contains 22½% of resinous matter. The content of resinous matter was determined as follows: 40 c.c. of the oil was mixed thoroughly with a like volume of henzine free from fat, in a graduated cylinder. Then 20 c.c. of concentrated sulphuric acid were added. The cylinder was shaken vigorously for a few minutes and then allowed to settle, until the layer of sulphuric acid hecame perfectly separated and an increase in the precipitate was no longer observed. The increase in the volume of the sulphuric acid multiplied by 2.5 gave the above results as the content of resinous products. The coefficient of expansion is .000074. The method employed consisted in ascertaining the density of the oil at 10° C. and 50° C. respectively, and calculating from the formula $V_o = V[1 - s(t_o - t)]$; s heing the coefficient of expansion. The oil contains small quantities of solid paraffine.

Of late years some improvement has heen made in the process of refining. At a large refinery the oil was distilled, with the following results: Light oil, 15%; burning oil, 30%; intermediate oil, 15%; heavy oil, 40%. The yield of the various products depends upon the composition of the crude oil, but it also depends upon the means of distillation and the method of purification. I will fully describe the process now in use for refining the oil under another subject

White Incrustation on Lamp Chimneys.

The Higashiyama oil contains a considerable quantity of sulphur, as shown in the ahove analysis. (California crude oil contains even more sulphur than the Higashiyama crude.) A peculiar pungent gas is produced during the distillation of the oil. The gases are volatile, especially in the fractions above 230° C. I examined this gas by conducting it into many bottles, which were previously provided with many various reagents, such as copper sulphate, lead acetate, hydrochloric acid, sulphuric acid, caustic soda, etc. I have proved that this gas is composed of some sulphide of a hydrocarbon, such as alkyl or allyl, and there is also present some hydrogen sulphide.

The sulphur compounds occur chiefly in the higher boiling-point fractions; therefore, in the distillation of the crude oil, sulphur tends to concentrate in the undistilled residues. The percentage of sulphur is progressively increased from lighter to heavier fraction. I have established this fact by various experiments, the following results being taken from one of them:

Fractions.	Percentage of Sulphur.
Under 150° C.....	.016
150° C. to 200° C.....	.026

The sulphur compounds of the Higashiyama oil have not yet been investigated, but it seems to be in the form of alkyl sulphide, and not in a free state or as mercaptans. There is no doubt that the Higashiyama oil is a sulphur petroleum.

Why is sulphur petrolcum objectionable? Sulphur compounds in burning oil produce the so-called "white incrustation" on lamp chimneys and exercise an injurious effect on the illuminating power of kerosene. The white incrustation adheres to the inner side of lamp chimneys when the oil is burnt in lamps with a flat burner. I have made a cursory examination of this white incrustation. It is a white film and forms gradually during the burning of the oil. The position and shape of the white incrustation vary with the construction of the burner itself, especially with the length of the wick holder. It adheres tenaciously to the inner side of the chimney and is not easily removed by rubbing. It is not volatile. It dissolves easily in water or ether, but not so easily in absolute alcohol. If we prepare a solution of this white incrustation and evaporate the solvent gradually on a watch glass, then groups of microscopic crystals (probably hexagonal system) will be seen. This white incrustation does not contain nitrogen. The solution reddens blue litmus paper, and a white precipitate is produced by the addition of two or three drops of barium chloride. On further analysis, I have proved that the white incrustation is not a sulphate, but is composed of some sulpho-compound of the aromatic hydrocarbons.

I took the solution of white incrustation from fifty chimneys, added concentrated nitric acid, and boiled two or three minutes. Caustic potash was added to the solution until it became alkaline, after which the solution showed a beautiful yellow color. I have proved that this solution owes its yellow color to the formation of naphthol yellow, not to picric acid.

I fused the white incrustation with caustic potash in a platinum dish and lixiviated the fused mass with distilled water. On the other hand, I also prepared the diazotized solution of aniline sulphonic acid. The above two solutions were mixed, after which the solution became orange colored. This color is due to the formation of beta-naphthol.

From the results of the above two experiments, it seems true that the chief constituent of the white incrustation is naphthol sulphonic acid, $C_{10}H_7$ (HSO_3). If we assume this to be a fact, the above experimental results will be represented by the following chemical formula:

(I) $C_{10}H_7$ (HSO_3) 2 KOH = $C_{10}H_7$ (OH) K_2SO_3

$C_{10}H_7$ (OH) 2 HNO_3 = $C_{10}H_5$ (NO_2) OH $2H_2O$

$C_{10}H_5$ (NO_2) 6 KOH = $C_{10}H_5$ (NO_2) OK H_2O

Napthol, yellow

(II) $C_{10}H_7$ (HSO_3) KOH = $C_{10}H_7$ OK 1 H_2SO_3

SO_2 SO_3K

$C_{10}H_7$ OK C_6H_4 C_6H_4

N:N N:N $C_{10}H_6$ (OH)

Beta Napthol

When oil containing sulphur in a free state or combined burns in lamps with insufficient draft, sulphurous acid gas is given off. The vapor given off from the incomplete combustion combines with oxygen to form naphthalene, which is produced by the condensation of both paraffine and naphthalene hydrocarbons. Thus naphthol sulphonic acid will be produced as a white incrustation.

Many difficulties have been experienced in the removal of sulphur from the distillates of the Higashiyama oil. The nature and production of the white incrustation will depend upon the construction of the lamp burner used; therefore, when we use the improved burner with a round wick, there is no difficulty in burning the oil. Notwithstanding this, however, it is a most important question to remove these sulphur compounds economically. There are thirty or more patents for the desulphurization of petroleum in foreign countries, but none of them are successful. Of these methods, the cupric oxide process is said to be the most successful. Fuming sulphuric acid is considered best for refining California crude oil. I have tried various methods of desulphurization, on the advice of Prof. T. Takamatsu and Prof. Y. Kawakita, but these investigations are not within the scope of this report. I will describe these experimental results under another subject.

On the Nishiyama Petroleum.

In the Nishiyama oil field the three principal districts are as follows, in the order of their production: Nagamine, Kamada, and Miyagawa. I examined the oil from the Nagamine district. It is green in color, with a specific gravity of .8953 at 15.5° C. The results of fractional distillation are as follows, each fraction being one-tenth of the crude oil by volume:

Number of fraction.	Specific gravity.
1st	.7589
2d	.8088
3d	.8550
4th	.8818
5th	.8996
6th	.9156
7th	.9254
8th	.9288
9th	.9320

By fractional distillation, referring to boiling point, the following results were obtained:

Fractions	PerCent	Sp.G.
Under 150° C.	8.2	.7901
150° C. to 200° C.	10.2	.8181
200° C. to 250° C.	16.0	.8616
250° C. to 300° C.	16.6	.8856
Above 300° C.	49.0	....

When the fraction under 150° is distilled, it gives the following results: Under 80° C., .4%; 80° C. to 90° C., .4%; 90° C. to 100° C., .4%; 100° C. to 110° C., .8%; 110° C. to 120° C., 1.0%; 120° C. to 130° C., 1.2%; 130° C. to 140° C., 1.2%; 140° C. to 150° C., 1.6%; above 150° C., 1.4%.

The oil contains .136% of sulphur and .255% of nitrogen. The iodine absorption value by Huble's method is 5.16. The oil contains 8.75% of resinous matter. The oil contains no solid paraffine. The coefficient of expansion is .000072.

Only a small part of the Nishiyama oil is distilled off as burning oil, the larger part remaining as residuum. This residuum is a good material for lubricating oil. One of the refineries fractionates as follows: Light oil, 4.3%; burning oil, 33.0%; intermediate oil, 38.0%; residuum, 34.7%. The burning thus obtained, after washing with concentrated sulphuric acid and caustic soda, is called first-class oil, and the burning oil made by mixing light oil and one portion of intermediate oil is called second-class oil. Intermediate oil is used for various purposes, and the residuum is used for fuel. Other refineries fractionate as follows: Light oil, burning oil, and intermediate oil, 45%; residuum, 55%. This residuum is treated in various ways, but the following outline will give a general idea: The residuum is first of all run into a large tank warmed by means of steam so as to make it fluid, then run into a still, in which it is heated and distilled by the aid of vacuum pumps. Cut off at 21 to 19 Beaume.

Intermediate oil and material for spindle oil are distilled over and then the residuum is left behind in the still. The residuum is next treated with sulphuric acid and caustic soda in an upright iron vessel provided with an iron blower. The residuum, after being washed with the acid and soda, is transferred to a still, again distilled under diminished pressure. Thus three portions are obtained: First, intermediate oil; second, light lubricating oil; third, heavy lubricating oil. The first fraction is washed with acid and soda and refined into burning oils of various grades. The second and third fractions are first subjected to a deblooming process. Then the oils are washed with acid and soda. Thus lubricating oils of various grades are made.

Machine oils from Nishiyama are of dark green color and have a specific gravity of 0.960 at 15.5° C., and flashing point of 178° C. Viscosity is as follows by Redwood's viscoitmeter:

510 seconds at 30° C.
252 seconds at 40° C.
170 seconds at 50° C.
108 seconds at 60° C.
80 seconds at 70° C.

I investigated the process of sunning, steaming, and blowing air for various kinds of our lubricating oils at Hoden Oil Company, by the courtesy of Mr. K. Kondo and Mr. T. Tashiro. I proved that we can improve the color of lubricants by steaming and sunning, and raise up their flashing point, but oil is gradually oxidized. Some oxidized hydrocarbons absolutely insoluble in gasoline are produced by exposing to direct sunlight. I think this hydrocarbon probably is the same as some hydrocarbons contained in California crude oil. Viscosity of lubricant from Nishiyama is generally high, but the flashing point of it is very low.

Relation of Boiling Point and Specific Gravity of Distillates.

I have obtained many fractions with some definite boiling point according to Mr. Mabery's fractional distillate test. I have done many combustion analyses of each fraction, but unfortunately I could not determine the bases of the hydrocarbons by this combustion analysis. Now I will report only the relation of boiling point to specific gravity of distillates.

I took 2,500 c.c. of Nishiyama crude oil in a still and obtained 1,200 c.c. of distillate. The distillate is washed with 5 per cent of concentrated sulphuric acid, 2 per cent of caustic soda (15° B.), and finally with a large quantity of hot water. This process is repeated. The distillate washed is fractionated with dephlegemeter under diminished pressure.

Fractions	Specific Gravity
100° C. to 125° C.	0.7490 (18.2° C.)
125° C. to 150° C.	0.7481 (16.8° C.)
150° C. to 175° C.	0.8124 (16.6° C.)
175° C. to 200° C.	0.8344 (16.4° C.)
200° C. to 225° C.	0.8587 (19.2° C.)
225° C. to 250° C.	0.8758 (19.2° C.)

Each distillate is washed twice with sulphuric acid, caustic soda and finally with hot water. Each distillate is fractionated with special shaped flask made especially to avoid cracking under diminished pressure. Results obtained after repeated distillations:

Fractions.	Sp. Gr. (1).	Sp. Gr. (2).
95° C.—100° C.	0.7350 (24° C.)	0.7351 (24° C.)
110° C.—115° C.	0.7538 (24° C.)	0.7540 (24° C.)
120° C.—125° C.	0.7599 (24° C.)	0.7591 (24° C.)
135° C.—140° C.	0.7779 (24° C.)	0.7782 (24° C.)
145° C.—150° C.	0.7885 (24° C.)	0.7892 (24° C.)
160° C.—165° C.	0.8044 (24° C.)	0.8052 (24° C.)
170° C.—175° C.	0.8147 (24.5° C.)	0.8159 (24° C.)

185° C.—190° C.	0.8286 (24.5° C.)	0.8290 (24° C.)
195° C.—200° C.	0.8377 (24.5° C.)	0.8382 (24° C.)
210° C.—215° C.	0.8532 (25° C.)	0.8536 (24° C.)
220° C.—225° C.	0.8595 (25° C.)	0.8603 (24° C.)
230° C.—235° C.	0.8735 (25° C.)	0.8738 (24° C.)
245° C.—250° C.	0.8794 (25° C.)	0.8800 (24° C.)

According to Professor Markoniff's investigation, Russian petroleum consists of naphthene hydrocarbons and he proved the relations between specific gravity and boiling point of naphthene hydrocarbons as follows (Cyklische Polymethylene des Erdols):

	Boiling Point.	Specific Gravity.
Hepta-naphthene (C_7H_4)	100°-101° C.	0.7324 (17.5° C.)
Octa-naphthene (C_8H_{16})	119° C.	0.7503 (18 ° C.)
Nono-naphthene (C_9H_{18})	135°-136° C.	0.7652 (20 ° C.)
Deca-naphthene ($C_{10}H_{20}$)	160°-162° C.	0.7936 (15 ° C.)
Hendeca-naphthene ($C_{11}H_{22}$)	179°-181° C.	0.8119 (0 ° C.)
Dodeca-naphthene ($C_{12}H_{24}$)	196.9°-197° C.	0.8055 (14.0° C.)
Tetra-deca-naphthene ($C_{14}H_{28}$)	240°-241° C.	0.8390 (0 ° C.)

Pennsylvania petroleum consists of paraffin basis, and Mr. Warren separates out the hydrocarbons as follows:

	Boiling Point.	Specific Gravity.
Normal Octane (C_8H_{18})	125° C.	0.7030
Noname (C_9H_{20})	136° C.	0.7410
Decane ($C_{10}H_{22}$)	158° C.	0.7570
Indecane ($C_{11}H_{24}$)	182° C.	0.7650
Dodecane ($C_{12}H_{26}$)	198° C.	0.7760
Tridecane ($C_{13}H_{28}$)	216° C.	0.7920

According to Mr. Mabery's investigation, Texas crude oil consists of naphthene hydrocarbons (CnH_{2n}-2), and he separates out the hydrocarbons as follows:

Fractions.	Sp. Gr.
130° C.-135° C.	0.8553 (20° C.)
155° C.-160° C.	0.8746 (20° C.)
190° C.-195° C.	0.8915 (20° C.)

It is probably a fact that Japanese petroleum consists of naphthene hydrocarbons considering the relation between the boiling point and specific gravity of each distillate. Plate 2 shows the relation between them. Mr. S. Takano, superintendent of the Nippon Oil Company, investigated the composition of Japanese petroleum by combustion analysis and measurement of molecular weight and refractive index. He concluded that Japanese petroleum consists of naphthene hydrocarbons.

I think it most important to see the relation between boiling point and specific gravity of each distillate, for the purpose of identifying an unknown crude oil.

On the Niitsu Petroleum.

There are two principal districts on the Niitsu oil fields—the Koguchi and Kumazawa districts. The oil is of a brown color, but not so dark as the Higashiyama oil. Its specific gravity is 0.942 at 15.5° C. The oil is subjected to fractional distillation, each fraction being one-tenth of the crude oil by volume, and the density of each fraction was determined and the following results were obtained:

Numbers of fractions.	Specific gravity.
1st product	0.8679
2d "	0.8879
3d "	0.9080
4th "	0.9230
5th "	0.9471
6th "	0.9572
7th "	0.9600
8th "	0.9740
9th "	0.9852

By the fractional distillation referring to boiling point, the following results are obtained:

Fractions.	Per Cent.	Specific Gravity.
Under 200° C.	2.5	0.7453
200° C.-250° C.	2.5	0.8479
250° C.-300° C.	25.0	0.8854
Above 300° C.	70.0	....

The oil contains 0.154% of sulphur and 0.411% of nitrogen. The iodine absorption value by Huble's method is 8.052. The oil contains 17.5% of resinous matter. Coefficient of expansion is 0.000066. The oil contains a large quantity of solid paraffine. The fractionation is carried on in one of the refineries as follows: Intermediate oil (0.901), 25%; heavy oil (0.954), 52%; pitch and loss, 23%. The heavy oil is redistilled by the aid of superheated steam, and 20% of the lighter portion is removed. Lubricating oils are obtained from this residuum. Other refineries fractionate as follows: Once run oil, 50%; heavy oil (0.924), 30%; pitch and loss, 20%. Once run oil is redistilled, and 15% of heavy burning oil, which has a specific gravity of 0.868, and 25% of intermediate oil and 10% of residuum are obtained. Lubricating oils of various grades are made from this residuum. The following table shows the specific gravity and flashing point of lubricating oils from the above residuum:

	Sp. Gr. at 155.5° C.	Flashing Point.
Spindle oil	0.9342	149° C.
Machine oil	0.9438	170° C.
Engine oil	0.9551	179° C.

Continued Next Issue

DEPARTMENT OF INTERIOR ON OIL.

The improved methods of administration instituted by Secretary Garfield, having for their purpose the simplification of business without any loss in accuracy or responsibility, have proven of great value, says the head of the Department of the Interior in his annual report. The report covers a wide field, dealing as it does with the work of the various bureaus embraced within its management, the territories, national parks and reservations, District of Columbia, corporations, etc.

Upon the subject of oil the Secretary of the Interior in his annual report has the following to say:—

"In my report for the fiscal year, ending June 30, 1907, I called attention to the remarkable increase in the production of oil in the territory and to the fact that it had been impossible for transportation companies to move it as fast as produced. Two large trunk lines, built by the Gulf and Texas Companies from the Glenn pool to the Gulf of Mexico, were completed during the year, and other small additional lines. The work in connection with oil leases at the close of the fiscal year was in splendid condition, there being but 549 leases pending in the office of the United States Indian Agent, Union Agency, and 516 pending in the office of the commissioner of Indian affairs and the secretary's office, as against 5,009 at the close of the previous year.

"During the year there was submitted the department for consideration a total of 7,597 leases. Up to June 30, 1908, there has been filed a total of 17,727 mineral leases, almost entirely oil leases. Of those considered by the department 10,525 had been approved, some of which have since been canceled, and 6,137 disapproved. Statements showing in detail the work during the past year and the status of oil leases are embodied in the report of the United States Indian agent, Union Agency, which is printed with the report of the commissioner to the Five Civilized tribes, and the report of the commissioner of Indian affairs.

"On April 20, 1908, the department modified rules, regulations, and forms to a considerable extent, making the minimum rate of royalty 12½ per cent for oil instead of 10 per cent, and the terms of leases of adult citizens to be five years, and so long thereafter as oil, gas, or other mineral may be found in paying quantities, and also provided that by proper stipulation the 10 per cent leases on earlier forms might be changed to conform to the new regulations by increasing the royalty. Also provision was made for the assignment of leases providing how they might come within the regulations of April 20, 1908, upon a showing of the assignee company similar to the one it would be required to make if it were an original lessee.

"There was marketed during the fiscal year ending June 30, 1908, 41,101,000 barrels of oil; the royalty collected by the United States Indian Agent during the year on account of oil and gas was $1,692,627.55. The oil and gas operations on the Osage reservation were conducted under leases covering 680,000 acres. Under provisions of the existing agreement with the Osage Indians all mineral is reserved to the tribe for a period of 25 years; therefore all royalties and proceeds arising from oil and gas operations are placed to the credit of the tribe. There were on June 30, 1908, 867 oil wells and 74 producing gas wells on said reservation. Of said gas wells 30 are utilized as a royalty of $100 per annum paid. The remaining gas wells are used for development of leases without payment of royalties or are shut in as not being available for commercial use.

"There was produced and run during the fiscal year ending June 30, 1908, from the Osage reservation 4,773,689.44 barrels of oil, one-eighth of which was credited to the Osage nation as royalty, the proceeds amounting to $243,610.36. The royalty from gas wells aggregated $3,125.

"It is estimated that on July 1, 1908, there were approximately 36,000,000 barrels of oil held in storage within the limits of the Creek and Cherokee nations.

"There has been a very great change in the pipe line conditions since the creation of the State of Oklahoma and the removal of restrictions from so many allotments.

"The law under which pipe line permits were granted authorized the giving of a permit for 20 years with a renewal for 20 years more under conditions to be imposed by the Secretary of the Interior. As long as the whole territory was under the control of the interior department these regulations and the conditions of the law could be readily enforced. Under the present conditions there is grave doubt as to whether effective regulations or control can be exercised.

"The State of Oklahoma now controls the highways and can impose such conditions as its legislature sees fit upon the corporations or individuals who may operate and build lines. There is no conflict of authority between the federal government and the state on this subject, for the reason that the federal government, through the interior department, has to do only with the restricted Indian lands, and whatever permit or easement that it grants under the law can apply only to such lands.

"I am now giving careful consideration to these conditions for the purpose of determining whether there should be any change in the regulations or in the policy of the depart-

ment hitherto carried out. It is clear that the work of the department thus far, through its regulations upon leasing and upon the pipes lines, has been of direct benefit to the owners of all lands, both Indians and others, but it may be that the new conditions that have arisen will require some change in the method of dealing with the remaining restricted lands."

THE PETROLEUM INDUSTRY OF THE UNITED STATES IN DANGER.

An impression seems to prevail in Washington that in the revision of the tariff, the provisions of the Dingley Act relative to countervailing duties on petroleum may be expunged. Last week the Oil Paint and Drug Reporter published an article from its Washington correspondent under the caption, "Petroleum Tariff Revision Might Hurt the United States," wherein attention was drawn in a pointed manner to the danger that Congress, yielding to a misguided popular outcry, might place petroleum products crude and refined upon the free list. The intent of such action would apparently be to strike a blow at the Standard Oil Company, and to cripple it as far as possible, regardless of consequences. With all due regard to the alleged sins of the big corporation, to satisfy in this way a spirit of revenge, would but be following the policy of one Sampson, a strong man, who pulled down an amphitheatre upon himself to kill his enemies, with the difference that where Sampson succeeded in crushing his enemies, in this case, the enemies would succeed in crushing Sampson and escape themselves Scot free.

If the intention as rumored is carried to completion and the countervailing duties in petroleum are revoked, there will be no greater sufferers than the so-called independent producers and refiners of this country, and that this fact has not been all along clear to every thinking mind, would be incredible but for the persistent hue and cry that will not be hushed, which would destroy to-day and reckon the cost to-morrow.

Among her many riches, the United States is blessed with an oil industry famous the world over, which, apart from what it has done in the cases of individuals, from the well digger to the capitalist, has helped in no measured degree to make the nation wealthy. We have an asset of fabulous value to destroy, which would be nothing short of lunacy, yet we have reason to believe that if so insane a measure as that contemplated in regard to petroleum, were brought before the House to-day, there would be danger of its passing.

The situation is simply this: As the laws is at present, petroleum, crude or refined, is admitted to this country free, except when produced in any country which imposes a duty on petroleum or its products exported from the United States, in which case there is imposed a duty equal to that exacted from us by the exporting country. The only serious competitor of the United States in the mineral oil business is Russia, who, by virtue of her own protective tariff, excludes herself from this market. If, however, the bars were let down, and the United States opened her market unreservedly to the nations of the world, there would be nothing to prevent producers and refiners in Russia, Canada and other countries, from dumping their surplus stocks here, while standing themselves immune from retaliation behind a tariff wall. This might possibly suit the anti-corporations, but the blow would fall with crushing force upon the so-called independent producers and refiners. To meet the cut in refined oil, which would speedily follow the innovation, the price of crude would be proportionately reduced, and as the corporation attacked produces a comparatively small proportion of the latter, it is manifest that the burden must fall upon the so-called independents. Concerns with superior facilities would be in a position to depress the price of crude and to bring the differential between it and refined to so narrow a margin, both in the domestic market and for export account, that all, save themselves, might be driven out of business. The result of years of patient labor, experiment and discovery by those whose life-work has been spent in developing the petroleum industry of the United States would be swept away to the benefit of foreigners. The move would seriously undermine one of the leading industries of this country, the magnitude of which will be best appreciated when it is known that during the year just closed there were produced here upwards of 200,000,000 barrels of petroleum, valued at about $146,000,000.

In the Scientific American Supplement there is a description of the new process for extracting oil from wells to meet special conditions at the Kryg field of the Galizische Karpathen Petroleum Actien-Gesellschaft. Briefly described what is known as the Leinweber system consists of the lowering of a band of suitable material into the well and the passing of it through the liquid, whereby a certain quantity either becomes absorbed by the cable or clings to it, by which means it is hoisted to the surface and squeezed out by roller pressure, the extracted oil falling into a suitable receptacle below. By connecting the ends of this band together an endless cable is produced, which, together with a continuous drive, enables extracting to be carried out uninterruptedly. The advantages are said to be numerous, and the simplicity of the apparatus in design and operation reduces the risk of breakdown to the minimum.

OIL FUEL EFFICIENCY IN STEAM BOILER FURNACES.

One occasionally hears of abnormal evaporative results claimed to have been obtained by the use of oil fuel. Some of these indicate a theoretical efficiency, and only recently the writer had experience of an inventor who claimed to have obtained an evaporation of 21 pounds of water in practice, says a writer in the "Petroleum World."

The full calorific value of a fuel is never obtained in practice, owing to various causes. Radiation will account for a loss of 12 per cent in externally fired and 6 per cent in internally fired boilers. Heat must be expended in the creation of chimney draught, and conduction must also be taken into account. The highest duty obtainable is probably one horsepower per pound of coal per hour, quadruple-expansion engines having developed one horsepower from 1⅛ pounds of Welsh coal per hour.

The efficiency of combustion in the furnace and the evaporative power of the boiler may be found thus:

Actual quantity of water evaporated per pound of fuel; theoretical evaporative power of the fuel.

The theoretical quantity of water required by a steam boiler for the development of one i.h.p. may be calculated as follows:

One i.h.p. is equivalent to

$$\frac{\text{33,000 foot pounds}}{\text{772 foot pounds}}$$

$=42.746$ thermal units per minute, 42.746×60 minutes $= 2{,}564.76$ thermal units per hour. The heat required to evaporate one pound of water from 212 degrees F. to steam of the same temperature is 966 units; therefore—

$$\frac{\text{2564.76 thermal units per hour}}{\text{966, the unit of evaporation}}$$

$=2.655$ pounds, the quantity of water theoretically required for the development of one indicated horsepower per hour.

If oil fuel, having a calorific power of 20,000 units per pound, were used in a furnace, and it were possible to obtain a theoretical performance in practice, the evaporation would be—

$$\frac{\text{20,000 thermal units}}{\text{866, the unit of evaporation}}$$

$=.1292$ pounds of oil, showing that less than 2.07 ounces of oil will theoretically develop one indicated horsepower per hour, and $1 \div 1{,}292$ pounds $= 7.74$ i.h.p. per hour developed by one pound of oil.

Comparing Russian petroleum residuum with coal, Urquhart said the former had a theoretical evaporative power of 16.2 pounds of water per pound of fuel, and the latter 12.2 pounds, at an effective pressure of 12 pounds per square inch. This shows that petroleum has, weight for weight, 33 per cent higher evaporative value than coal. From 7 to 7½ pounds of water per pound of coal is about the average generally obtained in practice, giving about 60 per cent efficiency, 40 per cent of the heating power being unavoidably lost. With oil fuel, 12.25 pounds is commonly obtained, giving $\frac{12.25}{16.2} = 75$ per cent of efficiency. Oil fuel is therefore 33 per cent superior in evaporative value; its useful effect is 15 per cent greater, being 75 per cent instead of 60 per cent, while weight for weight the practical evaporative value of oil fuel can be calculated as at least from—

$$\frac{12.25 - 7.50}{7.50} = 63 \text{ per cent. to}$$

$$\frac{12.25 - 7.00}{7.00} = 75 \text{ per cent. higher than coal}$$

The theoretical evaporation of 16.2 pounds is low. Galician pacoura has a theoretical evaporative power of 19.56 pounds of water from and at 212 degrees F., the coal available in that district having a theoretical evaporation of about 14 pounds.

Now assuming that 75 per cent efficiency is obtainable in both cases, the figures would be—

$$\frac{14.67 - 10.50}{10.50} = \text{practically}$$

a 40 per cent higher evaporative power.

In a boiler that was coal fired, with exceptional conditions for testing purposes, under the direction of Hoadley, an efficiency of 87.79 per cent was recorded. The result is fully one-third greater than obtains in good general practice.

The efficiency of the furnace in the case of oil firing is considerably higher than is the case when solid fuel is used, owing to the better regulation of air supply to the fuel, and the means of securing, by the admission of the minimum excess of air, more perfect combustion.

In coal firing, the frequent opening of the furnace doors considerably lowers the temperature of the furnace and flues.

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AN EXCLUSIVE PRIVILEGE.

Readers of the "California Derrick" were privileged last month to learn almost the exact figures for the production of oil in California in 1908. The readers of no other publication of any nature had this information, as it was exclusive. It was not only exclusive, but it was accurate, except, of course, the estimate of the last month, December.

The "California Derrick" is alive. It is up to date. It is reliable. IT IS THE LEADER. Let all who will follow. We do not boast of a monopoly of the talent of the State capable of writing an oil news item, but we get the news, and get it ahead of everybody else. Our news is, in the bulk, first hand. It is not as one party designated some of our clippings last month: "I noticed that you had some items last month, gleaned from the local papers, such as depth of wells, etc. This information is invariably incorrect, and most of it is generally merely 'a creature of the imagination,' as such information is practically unobtainable, and unwary 'correspondents' are easily steered far off the right track."

Our correspondents are not steered. They know first hand what is going on, and that is the kind of news you get from the fields. The monopolized news talent of the State does not prevent the "Derrick" from being correct in its news columns and ahead of all others.

No better praise could be desired than this compliment to the originality and reliability of the news columns of the "Derrick."

OIL IN MANUFACTURING.

That California is not one of the largest manufacturing States of the Union is not due to lack of natural facilities. It is not due to lack of cheap power, for it has within the borders of the State the cheapest kind of fuel—oil. Middle and Eastern States are forced to use coal, which at best is an expensive fuel unless establishments are located at the source of supply.

The efficiency of oil as fuel has been fully determined by numerous applications in all lines. More than one-fourth of the 48,000,000 barrels of oil produced in California is used as fuel by railroads, and another fourth is used by manufacturing establishments, although there is no means of knowing the exact amount. Probably only a little over one-quarter is of such quality as can be used for refining purposes. The balance is used for roads, etc.

Even though the supply of oil should fail to meet the demand for manufacturing purposes, and that time appears to be in the dim future, California has its vast reserve energy stored in the mountains in shape of water. Its water power has never been developed, and will not be for decades to come. It is almost inexhaustible.

For the present, and for years to come, oil will undoubtedly be the fuel of the State from the standpoint of economy, and as our production grows, the consumption will increase in ratio. Our home market in this line is yet to be developed. The foreign market is already a great factor.

W. R. Odom, of the Assembly, and W. E. Cartwright, of the Senate of the California Legislature, are preparing to push a bill to regulate the handling of or shutting off of water in wells, in accordance with the recommendations of the United States Government Geological Survey. There is likely to be some opposition to this bill from the large companies, judging by some remarks that have been noticed in some of the oil papers of the State. It is to be hoped that a compulsory clause will be included in the bill to make public the logs of all wells for the welfare of the entire industry.

What does all this big activity of the Union, Associated, and Standard Oil Companies mean in California?

It means that the large deals made within the last few months are but the beginning of operations that can scarcely at this moment be realized. The public will have to hustle if it enjoys more than a small portion of the tens of millions of profits that will accrue to the oil industry this year and next and the years to come.

Oil companies listed on the San Francisco exchange paid in dividends in 1908 the sum of $5,579,000. It is safe to estimate that three millions more were paid by companies listed on the Los Angeles exchange and other companies not listed. A considerable portion of this money was earned from low-priced oil, whereas the price at this time is more than double what it was when the old contracts were made.

California's oil production last year averaged 131,500 barrels per day, while the average for the month of December in New York, Pennsylvania, West Virginia, Kentucky, Tennessee, Ohio, and Indiana amounted to 188,000 barrels daily. The average production of these wells is something like 10 barrels a day, against an average in California of several times that amount. The production of the Kansas and Oklahoma fields is estimated at 120,000 barrels daily at the present time.

It is with much pleasure that we note the entrance of Mr. U. M. Thomas into the journalistic field at Coalinga. Mr. Thomas has purchased the "Oil Record" of that growing city and will make of it a true exponent of the oil industry of that vicinity. Trained to newspaper work in its every detail, Mr. Thomas will publish a paper second to none in the State from the standpoint of reliability and completeness. The "Derrick" bespeaks for the "Oil Record" the cordial and hearty support of all interested in the oil industry, as we are sure that appreciation will be merited.

While the Government may not collect the $29,000,000 fine levied against the Standard Oil Company, its attorneys are framing up a proposition to get $40,000,000, the difference between the two sums, possibly, being figured as interest for delayed payment.

It is an old story that proved oil ground is worth $2,000 an acre, and a great many oil men stick to that figure. As a matter of fact, proved ground may be worth $1,000 or $10,000, according to conditions. Some lands have produced considerably more oil than even the latter sum and will produce for many years to come. The explosion of this ridiculous theory has already come to pass, as more than one tract of practically undeveloped ground has sold for $3,000 per acre within the past two months, and higher prices even than this will prevail unless all signs fail. How anybody could place a limit of this kind on oil ground is a difficult matter to determine.

San Francisco and McKittrick stock sold 18 months ago at $2.50 a share. Dividends of about $4 have been paid since then and the stock is now worth upwards of $20 per share.

Sterling stock was selling eight months ago at $2.50 a share. It is now worth $5 a share and $1.50 a share has been paid in dividends in the meantime.

Ten months ago Peerless stock was selling at $3 a share. It is now worth $5.60. It has paid $83,000 within that time in dividends and this on 30 cent oil under old contract.

DISAGREES WITH ANDERSON

In a letter to a private individual connected with a Nevada oil proposition J. W. Frank, of San Francisco, gives his views as follows:—

"I do not care to question Mr. Anderson's report on the Reno oil fields further than to state that I am positive that he has made a mistake regarding this oil field. From his report you can readily see that he depends on seepages to make his determinations. Quoting from his report as follows: 'The examination of these beds has resulted in the conclusion that no paying quantity of petroleum, if any at all, will be found in them for the following reason: No indication of the presence of oil has been discovered in the beds at the surface although they are tilted and the succession exposed as a whole in such a way that some of the oil if any were present, could hardly fail to escape to the surface and leave a trace.'

"From the foregoing you can see that he depends on finding seepage or surface indications in order to report favorably on an oil district. If seepages of oil are found in a district, a child would know that oil existed in that locality somewhere. The same as finding a spring of water, common sense teaches us that this spring of water has a source somewhere. If Mr. Anderson wanted surface indications I could take him to a place in Nevada where the crude asphalt lies on the surface, the same as it does here in California's oil field, then he would probably report favorably on this particular district. Why? simply because he would be forced to admit that asphaltum is nothing more or less than the residuum of oil.

"Personally I have no use for geologists when it comes to locating oil. For instance take our Kern oil fields in this State. The government geologists, also the Standard Oil Company's best geologists, reported on this field and their reports were as follows: Very little oil if any exists in this field, in fact if any oil should be found, it would not be in commercial or paying quantities. This field, this year, has produced 12,000,000 barrels of oil, which proves as I contend that as a general rule, geologists are a failure. One of the officers of the Associated Oil Company told me that their company had spent over $1,000,000 in sinking for oil where a geologist had told them to sink for oil and they had never got a barrel of oil.

"Quoting from John D. Archibold, vice-president of the Standard Oil Company, who has been on the witness stand for the past week, being questioned by Kellogg, the government attorney, he states as follows: Geologists have been little aid to us in the oil business, often they tell us where oil is not, but not often where oil is.

"In conclusion I would like for Mr. Anderson to explain why and where all the oil came from that was bailed daily from the Washoe Company's well. The truth of my assertion I will refer you to your well-known and highly respected citizen, Mr. Charles Colburn, who has visited the Washoe Oil Company's well many times and has seen the surface of the water after bailing, entirely covered with oil.

"Whether the Washoe Oil Company continue their present well or whoever does continue the work, their efforts will be crowned with success, and I am as positive that oil does exist there in paying quantities as Mr. Anderson is positive it does not, and the drill is the only way to determine who is correct.

"Yours most respectfully,

"J. W. FRANK."

OIL COMPANIES EXCLUDED FROM MISSOURI.

A decision was handed down on December 23 by the Supreme Court of Missouri excluding the Standard Oil Company, of Indiana, and the Republic Oil Company, from that State and dissolving the Waters Pierce Company, of St. Louis. The decision also carried with it a fine of $50,000 in the case of each company.

The order dissolving the Waters Pierce Oil Company will become effective January 15 next, unless the company on or before that date furnishes to the Supreme Court satisfactory evidence that it intends to operate as an independent concern. The court finds that the companies conspired:—

(1.) To regulate and fix prices to retail dealers.

(2.) To control and limit the trade in the refined products of petroleum.

(3.) To control and limit and prevent competition in the buying and selling of these products.

(4.) To deceive and mislead the public into the belief that they were separate and distinct corporations pursuing independently their business as legitimate competitors.

The suit was instituted by Attorney-General Hadley, in 1905, and the evidence taken by a special commissioner in St. Louis and New York has been before the State Supreme Court for more than a year.

The opinion was written by Judge Woodson. All seven judges concur and Judges Graves and Lamb wrote separate concurring opinions.

In a motion for a rehearing in the Missouri ouster suit against it, filed in the Supreme Court, Jefferson City, January 1, the Standard Oil Company, of Indiana, asked to be allowed to remain in Missouri as long as it conforms to rules and regulations that may be laid down by the court.

An appeal was also filed with the court for a remittance of the fine of $50,000 imposed upon the Republic Oil Company on the ground that this company has gone out of business.

The motion for a rehearing and the appeal are signed by Alfred D. Eddy, of Chicago, and Frank Hagerman, of Kansas City, attorney for the company. Mr. Hagerman left for New York to consult with the chief officers of the company.

While the company has filed a motion for a rehearing it is said that the Standard attorneys will seek a modification of the recent decision of the Supreme Court. Attorney-General Hadley will not consent to a modification of the decision unless the Supreme Court orders it. The company especially desires to be allowed to continue the Sugar Creek refinery near Kansas City in operation.

EVOLUTION OF THE PIPE LINE.

The history of pipe lines goes as far back as 1815, when William Murdoch, the discoverer of lighting with illuminating gas, installed in the Soho works, near Birmingham, England, the first piping works for conveying gas throughout the shops. This pipe line consisted of old musket barrels, bought at the close of the long European wars. As the oldest pipe lines were made up of gun barrels, it has been occasionally reported during recent wars that the gun barrels were constructed of cut-up gas pipe.

In 1824, at Fredonia, N. Y., the first natural gas was piped to illuminate the village inn in honor of the visit of General de Lafayette. Later, in 1841, William Thompkins struck a large flow of gas above the burning springs in the Great Kanawha Valley, and made use of the same for heating salt furnaces. But it was not until 1857 when professional oil-well drilling really began. Almost invariably the escaping gas was used to some extent for firing the boilers of the drilling engines.

The first natural gas plant was built in 1872; this consisted of a five-and-a-half-mile pipe line of only two inches diameter, laid from the Newton well to Titusville, Pa., for the purpose of furnishing gas for domestic use. The great advantage of gas and oil as manufacturing fuel was realized two years later, when Messrs. Rodgers and Borchfield began to use them in the puddling and heating furnaces and under steam boilers. The glass industry also discovered that its production was of a better quality when natural gas instead of coal fire was employed.

It is almost impossible to give an exact estimate of the cost of pipe lines without knowing the prevailing circumstances, which depend on the price of the pipe, cost of laying, and of future repairs and depreciation.

As a rule, wrought iron pipe seems to resist corrosion better than Bessemer steel pipe, and good tar or paint coating will add greatly to the life of the pipe. In other respects, cast iron pipe lasts much longer, but it is not well adapted to high pressures. In many places, salts and electrolytic action quickly destroy the pipe, but at other places the line remains perfect for many years.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

The great activity about this field—Coalinga—is only the forerunner of a greater activity from now on until the run of oil will proclaim Fresno County first in oil production. Drilling on section 34-17-14, about 18 miles northerly—air line—from Coalinga, reports received in town indicate that a very promising oil sand has been entered, while the activity about El Cerrito district, about 21 miles southerly—air line—indicates great confidence of practical oil men that that section is showing up satisfactorily. There never was a time in the history of oil as promising of great results as this year 1909, and unless all business indications fail, this will be a banner year in the industry in California. In December, Coalinga produced about 1,100,000 barrels of oil.

The Nevada Petroleum Company, holding 240 acres in the east half of section 30-20-15, enters this field as one of the strong companies from the very start. The company has material on the ground for three standard drilling rigs, with three complete sets of ideal rig irons painted black. This will extend the territory east about one-half mile. The wells on the west line will be about 2,300 feet to 2,500 feet deep into the oil sands. Mark L. Reque, of San Francisco, organized the company. The other parties are Mr. Erb, secretary of the Miners' Association of Goldfield; Geo. Wingfield, of Goldfield; Mr. Bradley, a prominent mining man of San Francisco; Mr. Abbott, a prominent commercial man of San Francisco; and Captain Barneson, of the El Cerrito and the Wabash Oil Companies, who comprise a strong team. The deal was floated by Tom A. O'Donnell.

The heavy freight traffic over this branch of the Southern Pacific will soon put the present rails out of commission. There are three heavy freight trains a day, and two regular passenger trains. Not infrequently the passenger traffic is delayed by a freight off the track. It is hoped that the company will wake up to the demands of the business men and the traveling public to the present conditions; we are growing, and need better service.

There is reported to be at least twenty water wells drilling in the Lost Hills country, in an effort to prove up under the Desert Act. Attention has been drawn to this section of country on account of oil seepages not far from the present scene of operations. The present attitude of the authorities in the General Land Office is to thoroughly examine all attempts to prove up mineral—oil is mineral—lands by homestead and Desert Act entries.

George Towhie, of San Jose, and son, Robert Towhie, spent several days in the field last week. Mr. Towhie, a railroad building contractor, was much pleased with the development of the field, and so expressed himself.

The contracting plumber and the painter and paperhanger are all busy nearly every night making estimates for new buildings under contract. A large number of modern buildings are being planned for this year.

The Pluto Oil Company, section 19-25-19, has 150 feet of open-hole spudding. The company has material on the ground for a water well that will be spudded in this month.

The Investors' Oil Company, a reorganization of the Devil's Den Consolidated Oil Company, on section 22-25-18, will endeavor to complete the well drilling on the property.

The Golden Crest Oil Company, section 12-22-15, is 1,300 feet deep with 10-inch casing. The formation is very good drilling; stands up well.

The Shreeves Oil Company, section 6-21-15 (Associated Oil holds control) has again cemented off the water in the old well.

Mr. Byron et als., of Lemoore, are making ready to start a standard rig on section 11-25-19, to develop for oil.

The Amy Oil Company, section 6-21-15, has 600 feet of 12½-inch casing in the hole, going nicely.

The Lucile Oil Company, section 6-21-15, are 550 feet deep in well No. 3 with 12½-inch casing.

The De Luxe Oil Company, section 6-21-15, are 250 feet deep with 16-inch stove-pipe casing.

The Sauer Dough Oil Company, section 6-21-15, has cemented off the water in well No. 1.

The Jefferson Oil Company, section 6-21-15, are over 500 feet deep with 12½-inch casing.

The Wm. Graham property, section 6-21-15, are drilling with a rotary rig; progress not very good.

The Coalinga-Aladdin Oil Company (People's Associated), section 6-21-15, will soon develop.

On December 31, there were 24 drilling wells suspended; 111 wells drilling; 55 producing wells suspended; 418 producing wells, an increase of five over November, and 53 new rigs erected.

The Following Statement Shows the Operations Being Carried On in the Coalinga Field.

COMPANIES	Sec. T. R.	Drilling Wells Susp'd	Drilling	Producing	New Rig
NORTH END.					
North End Extension Oil	20-18-15	..	..	..	1
Big Shell Petroleum Oil Co	29-18-15	1	..	..	..
Peerless Consolidated	28-18-15	..	1	..	..
Tavern Oil Co	34-18-15	..	1	..	..
Imperial Oil Co	2-19-15	..	4	..	1
T. C. Oil Co	2-19-15	..	3	2	1
Totals		1	9	2	3
EAST SIDE.					
California Oilfields, L'td	10-19-15	..	1	2	..
Kern Trading and Oil Co	11-19-15	..	..	..	2
Loraine Oil Co	12-19-15	..	1	..	..
British Con. Oil Corpor., L'td	12-19-15	..	1	..	..
California Oilfields, L'td	14-19-15	..	2	5	..
Scott and Clark, et als	24-19-15	..	..	..	1
Boston and California Oil Co	24-19-15	..	1	..	..
Montana Oil Co	24-19-15	1	..	..	..
Pittsburg Oil Co	24-19-15	1	..	..	..
Coalinga Oil Co	20-19-15	..	..	7	..
Home Oil Co	20-19-15	..	..	8	..
California Oilfields, L'td	21-19-15	..	..	9	..
Camwell Oil Syndicate	22-19-15	..	2	1	..
Coalinga Peerless Oil Co	22-19-15	..	1	13	..
National Thirty Oil Co	22-19-15	..	..	5	..
Sauer Dough Oil Co	22-19-15	..	..	10	..
Caribou Mining & Oil Co	22-19-15	..	1	15	1
Twenty-two Oil Co	22-19-15	1	1	..	..
Octave Oil Co. (Merced lease)	22-19-15	..	1	..	..
Record Oil Co	22-19-15	1	1	1	1
British Con. Oil Corpor., L'td	26-19 15	..	1	1	..
California Oilfields, L'td	26-19-15	..	4	1	..
California Oilfields, L'td	27-19-15	..	11	47	2
Standard Oil Co	28-19-15	..	11	46	5
Stockholders' Oil Co	28-19-15	..	..	5	..
S. D. Porter	26-19-15	..	..	..	1
California Oilfields, L'td	29-19-15	..	..	2	..
Aetna Petroleum Oil Co	30-19-15	1	..	..	..
Coalinga Mohawk Oil Co	12-20-15	..	1	..	2
Kern Trading and Oil Co	3-19-15	..	..	..	1
Turner Oil Co	2-20-15	2	2	..	..
W. K. Oil Co	2-20-15	..	..	1	1
California Oilfields, L'td	34-19-15	..	3	8	1
Kern Trading and Oil Co	35-19-15	..	3	..	1
Totals		7	49	187	19
WEST SIDE.					
Kern Trading and Oil Co	31-19-15	..	..	5	..
Confidence Oil Co	31-19-15	..	..	7	..
Maine State Oil Co	31-19-15	2	..	4	..
Guthrey Oil Co	31-19-15	1	..	3	..
Commercial Petroleum Co	31-19-15	..	1	7	1
Woy, Mechan & Madsen	31-19-15	1	1	..	..
Call Oil Co	32-19-15	1	..	1	..
Fresno-San Francisco Oil	1-20-14	..	..	3	1
Penn. Coalinga Oil Co	1-20-14	..	..	4	1
Cypress Oil Co	1-20-14	..	..	4	..
Zier Oil Co	1-20-14	..	..	8	..
Shawmut Oil Co	12-20-14	..	..	7	..
Ward Oil Co	12-20-14	..	..	5	1
Seneca Oil Co	12-20-14	..	1	3	..
St. Clair Oil Co	12-20-14	1	..	..	..
Pilot Oil Co	12-20-14	..	..	3	1
New Era Oil Co	12-20-14	..	1	..	..
Bunting & Brix Oil Co	12-20-14	..	..	3	..
British Con. Oil Corp., L'td	12-20-14	..	1	4	..
Union Oil Co	13-20-14	..	2	9	..
Kern Trading and Oil Co	13-20-14	..	3	4	1
Coalinga Petroleum Co	14-20-14	..	..	5	1

COMPANIES	Sec. T. R.	Drilling Wells Susp'd	Drilling	Producing	New Rig
Queen Oil Co	14-20-14	..	..	..	1
Home Oil Co	14-20-14	..	..	5	..
Coalinga Western Oil Co	23-20-14	..	..	8	..
St. Paul-Fresno Oil Co	23-20-14	..	..	7	..
Inca Oil Co	24-20-14	..	..	23	3
Traders' Oil Co	24-20-14	..	..	14	..
Wabash Oil Co	24-20-14	..	1	14	..
Claremont Oil Co	24-20-14	..	2	5	..
Premier Oil Co	24-20-14	..	..	5	1
Kern Trading and Oil Co	25-20-14	..	4	7	2
Kern Trading and Oil Co	23-20-14	..	1	..	1
Ozark Oil Co	26-20-14	..	1	3	..
Angeles Oil Co. (Traders' O. Co.)	26-20-14	..	..	..	..
Blue Diamond Oil Co	26-20-14	..	..	..	..
Caledonian Oil Co	26-20-14	..	..	2	..
Cowder Oil Co	26-20-14	..	..	2	..
Circle Oil Co	35-20-14	..	..	..	..
Associated Oil Co	36-20-14	1	7	7	4
Claremont Oil Co	4-20-15	..	1	..	2
Merchants' Crude Oil Co	6-20-15	..	..	3	..
York Coalinga Oil Co	6-20-15	..	..	2	..
S. W. & B. Oil Co	6-20-15	..	1	3	..
New San Francisco Crude	6-20-15	..	1	5	..
Esperanza Oil & Gas Co	6-20-15	..	1	7	..
Section Seven Oil Co	7-20-15	..	..	3	1
Coalinga Pacific Oil Co	7-20-15	1	..	4	..
Porter & Scribner	7-20-15	2	1	1	..
M. K. & T. Oil Co	8-20-15	..	1	..	..
Peerless Consolidated Oil Co	10-20-15	1	..	..	..
Coalinga Mohawk Oil Co	12-20-15	..	..	..	..
American Petroleum Co	18-20-15	..	2	..	..
American Petroleum Co	30-20-15	..	4	2	2
Nevada Petroleum Co	30-20-15	..	..	..	..
T. C. Oil Co. (Wm. Graham)	6-21-15	..	1	..	..
Lucile Oil Co	6-21-15	..	1	2	..
De Luxe Oil Co	6-21-15	..	..	..	1
Amy Oil Co	6-21-15	..	1	..	..
Acorn Oil Co	2-20-14	..	1	..	..
Jefferson Oil Co	6-21-15	1	..	..	1
Sauer Dough Oil Co	6-21-15	..	1	..	1
Shreves Oil Co. (Associated)	6-21-15	..	1	..	..
St. Francis Oil Co	6-21-15	1	..	..	..
Totals		13	44	222	27
SOUTH FIELD.					
Coalinga Hub Oil Co	22-21-15	..	..	..	1
Express Oil Co	24-21-15	..	..	..	1
Gladys Oil Co	26-21-15	..	..	..	3
Esperanza Oil & Land Co	30-21-15	1	..	..	..
Jacalitos Oil Co	30-21-15	1	..	..	..
People's Associated Oil Co	32-21-15	..	1	..	..
Mt. Hamilton Oil Co	14-21-14	1	..	..	..
Golden Crest Oil Co	12-22-15	..	1	..	..
Lake View Oil Co	26-21-17	..	1	..	..
El Cerrito Oil Co	14-23-17	..	1	..	..
Pluto Oil Co	19-25-19	..	1	..	..
Totals		3	5	..	5
Totals by Fields.					
EAST SIDE FIELD		7	49	187	19
WEST SIDE FIELD		13	44	222	27
NORTH END FIELD		1	9	2	3
SOUTH FIELD		3	5	..	5
Totals		24	107	411	54

Total shipments for the month of November, 1908, 998,075 barrels.

No oil on hand at midnight of November 30th on the East Side.

On the West Side there was on hand at midnight 27,500 barrels.

SANTA MARIA.

The Dome Oil Company has erected a rig on the Wickenden Ranch about three miles northeast of Los Alamos and are now ready to "spud in." This rig is in a hitherto undeveloped part of the field and the company is taking big chances on getting a well. They have much territory in the "charmed circle" however, and the Los Alamos project need not be viewed with any alarm by the stockholders.

The Brookshire Oil Company has acquired new property on the Midway near Maricopa and have already begun the erection of a rig, the work being in charge of W. P. Alvarado, formerly a driller with the Brookshire at Santa Maria. As the new property is in shallow territory, the company looks for early returns on the investment.

The New Pennsylvania's well No. 5 recently put on the pump is producing steadily and while not anything wonderful in the producing line, is very satisfactory to the company.

Pinal Oil Company's No. 24 is about completed and will add one more to this company's long string of producers.

The Graciosa and Western Union Oil Companies have so far been unable to cope with the water problem in the older parts of their territories. These companies are fortunate in having a great extent of territory and have moved the chief seat of their operations to the south of the affected territory about a mile and have been well rewarded, each bringing in a good producing well during the last month.

The West Huasna well is looking very good at present and a movement is on foot to pool the stock. This company is composed mainly of Orcutt people and the stockholders are assured of a "square deal" under the present management.

Prices of fuel oil are steadily advancing and now command the attention of oil men to such an extent that many companies have obtained or are endeavoring to get property in the shallow fields which produce heavy oil. As most of the light oil in this field is contracted to the Standard and Associated Oil Companies at prices ranging from thirty to sixty cents a barrel, and as heavy oil can easily find a market at from eight-five cents to one dollar per barrel in carload lots, the producers are beginning to see the mistake in contracting oil for a long term of years.

SOUTHERN FIELDS.

Although the year just closed was the best for the California oil producer in the history of the industry, every one has apparently forgotten it and is looking forward. And there are larger things in view for the year 1909 than for 1908. The rapidly increasing demand will be fully supplied. The effects of the wonderful activity in field work are only now beginning to show themselves, and only now is the output increasing to any appreciable extent. Many wells begun months ago, and even a year ago, have not yet been completed, and some of them will not be for some time yet. In fact, many do not look for the big increase in output for from 60 to 90 days. The fact that at present the output in the southern fields exceeds the local consumption does not worry any one now. The Union and the Associated are at present taking care of the overplus, and the producers are getting ready to take care of the balance.

Their project of forming an association has a brighter outlook now than it ever had, and there is every indication that it will be a "go." About 25 or 30 local operators have signed up, and a committee is at work to secure the names of operators from the Salt Lake, Fullerton, and Whittier fields. The difficult problem has always been considered the producers of the Los Angeles city field, on account of their number. Three years ago there were 1,200 wells in the field, operated by some 300 companies or individuals. Today these numbers have been reduced to less than 500 wells and but 55 operators, and these 55 operators—the majority of them—are fully aware that the only way to secure best results is by uniting. The wells average but three barrels per day, and there are several producers who own but one well each. The total output of the field, however, is about 50,000 barrels per month. While the operators as individuals cannot hope to do anything in the way of taking large contracts, taken together, their output might cut quite a figure in the market, and if added to the other independent production of the southern fields, could establish prices when it came to figuring with the marketing concerns, for it is assumed the new association will market its oil through either the Union or the Associated.

As much as the wildcatters have tried to "open up something" in the south, they have so far accomplished nothing. The well in the Santa Monica Mountains, near the coast, north of the Miliban ranch, and the one near Calabasas, across the range, north from Sherman, have both been failures so far, and experienced oil men say there is not every chance in the world of getting oil. The well on the Bixby ranch, near San Pedro, and the one on the Palos Verdes ranch are neither of them as deep as the owners intend to drill them in order to test the territory, but both are past the 1,500-foot mark, and there is no oil in sight. At Newport Beach, on which the highest hopes have been placed for opening up a new pool, there has nothing resulted except a showing large enough to urge the operators on, but no oil in commercial quantities. The Balboa Oil Company came the nearest to success in their No. 1, where at 2,800 feet some oil sand was encountered and was drilled into about 70 feet. The latest report is that the hole is still full of water and drilling is proceeding. There is a possibility of getting a well here, although the Newport Bay Oil Company's No. 1, not far from this location, was drilled nearly 3,000 feet and then abandoned. J. M. Kellerman is also drilling in this district, but has nothing yet. The Union test well on the Bastenchury ranch, near Fullerton, is reported as down about 3,500 feet, without favorable results as yet. It is also said, however, that another well will be put down on another section of the territory, and perhaps two, in order to thoroughly test the property. The Graham and Loftus well, in the same district, about a mile south of the developed field, is said to also be below the 3,000-foot mark, and no oil. The sand was expected here at about the depth named, but of course, being in new territory, no accurate estimate could be made.

Monitor Cheyenne, Now on Trial Trip, Equipped With Crude Oil Burners

SALT LAKE FIELD.

Everything is booming in this field, the same as in every other, at present. There are nearly 50 strings of tools running, and even with these it is difficult to increase the production rapidly, although some very good wells are being brought in every few days. But the days of the gusher for this field seem to be past, and the natural decline in the older wells is very rapid, and many new ones are necessary to keep up the output. This is the largest field in the south, both in production and extent of territory, and yet its limits have not yet been defined, at least toward the west and northwest. The eastern limit has about been reached, and the Associated and Brea Ranch Companies, both drilling in the extreme east, have abandoned their work there on account of slim results. Toward the north there is still a chance for extension. The Pacific Light & Power Company has located a well nearly two miles north of its developed property west of Hollywood, where drilling is now going on, but the hole is only about 600 feet deep. A. F. Gilmore's No. 11 is also looked on as one of the wells to prove up more territory toward the north. It is located about one and one-half miles farther west than the Pacific Light & Power Company's well, but not so far north. The southern limits are also an undetermined quantity. The Union, near Rosemary station, is down 4,500 feet in one of the holes, without oil, although a well not a quarter of a mile away was drilled 3,600 feet and started off as a gusher and is still producing. It is believed the field must be developed in a northwesterly direction if it is extended at all. The fact is, enough land has been proven up in that direction to furnish drilling for all the companies operating, for a long time to come.

One of the largest land transfers in the field during the month was the sale of the Gable and McDonald interests to the Union Oil Company. The property consists of 760 acres and has one drilling well on it. It is located near Beverly, about four miles west of Sherman Junction and near where the Associated brought in its first well in that vicinity at 2,800 feet. The property is surrounded on three sides by drilling and producing wells and is considered A1 territory. The Union will, it is said, put several strings of tools to work on the tract at once and fully develop it.

There is still a strong belief that the Standard intends to come into the southern fields as a buyer. It is spending millions of dollars to secure territory that will produce the high-gravity oil suitable for refining. The company never has done much business in the southern fields, but these fields, especially the Fullerton and Whittier fields, produce just the stuff the Standard is looking for, and the Fullerton field is capable of producing ten times as much as it does, as the light oil belt has scarcely been touched, because the Puente Oil Company is the only buyer in the field for this grade of oil, and it produces nearly enough to supply its own wants. The surplus, of course, it is necessary to sell on the same basis as the heavy fuel product. There is very little oil of this grade in the Salt Lake field, but the Standard can buy enough in the other fields to make it an object if it cares to come in, as the Union and Associated do not seem willing to pay a premium on refining oil.

Nothing appears to have been done yet by the Associated in the reported project of connecting up the Salt Lake field with Redondo by an eight-inch pipe line. The company is just completing two 35,000-barrel tanks at the latter point, and a wharf is being prepared to accommodate the large Japanese oil steamers which heretofore have loaded at Gaviota; and there is no doubt but that the Associated intends to make this port its principal shipping point in Southern California. At present the oil is transported from the field to Redondo by rail, an expensive operation at best, and it is believed that the pipe line will soon be actually on the ground as well as on paper. The distance is about twenty miles.

Another property transfer in this field during the past month was the sale of the N. D. H. Oil Company's holdings, located about a mile south of Rosemary, near Hauser. There is one well being drilled on the property, and, strictly speaking, it is a wildcat proposition. The hole is down about 500 feet, and of course at that depth does not test the property. The terms of the sale are not made public, but it is stated the transfer was for the purpose of relieving the old concern of certain embarrassments. The new owners intend to push the work vigorously to test the territory.

Considering the great demand for oil, there seems to be no doubt but that the intense activity in this field evident the past year will continue. All the operating concerns are large and strong and all want oil.

A. F. Gilmore has about recovered from the effects of the disastrous fire which destroyed $50,000 worth of his oil property about three weeks ago. He has rebuilt the rig over No. 5 well, which was destroyed, and it is again producing. The loading tanks have been rebuilt and he is able to market his oil as usual. Mr. Gilmore markets his own oil and makes contracts with any one from Santa Monica to East Los Angeles for any amount up to 1,500 barrels per day. He owns about 80 head of mules and about a dozen tank wagons, and markets every barrel of oil he sells, in this way. Mr. Gilmore enjoys the distinction of being the only individual oil operator on a large scale in this State. He owns 256 acres of land, and developments by other concerns all around him indicate that the entire tract is good oil land.

The market conditions remain about the same as for some time past. That there is an upward tendency is indicated by the bid of the Union and Associated Companies on the Los Angeles city contract for 350,000 barrels to be delivered during the next two years. The bid of both concerns was 75 cents. This is an advance of about 10 cents over the last contract made of any size. No contracts have expired recently, but there are several due to expire within the next 30 or 60 days. That they will be renewed at the same price is not believed. A substantial advance will be asked, and no doubt paid. In the renewal of these contracts is the only way an outsider has of learning the price of oil. The little "jags" of oil peddled by wagon around to small machine shops, etc., do not establish the price, as these small amounts are sold by individuals who "need the money" probably, and have no relation to the actual value.

FULLERTON FIELD.

Big things happened in this field during the past month, and within the next 60 or 90 days the output should be fully 20,000 barrels per day. The largest event was the completion of Fuller-

ton Oil Company's No. 3, in the western end of the field. This well was located within 150 feet of the Orange Oil Company's No. 1, because the latter was one of the best wells in this section of the field. It has been doing 250 barrels per day of high-gravity oil since it was finished. This well was 2,300 feet deep. The Fullerton well was drilled to that depth without a showing. It was drilled deeper, and still no showing. The 3,000-foot mark was passed, and the owners came near abandoning the well, but they went on to 3,200 feet and were rewarded. The well began to flow, and the first 24 hours after the water was exhausted did 3,000 barrels of light refining oil. It is a sensational performer and has taken away the honors of being the largest well in the field from the Columbia Oil Company's No. 13. It has started development work in this section of the field with a vim. It is directly in line with the old Puente light oil district and there is no doubt but that it will result in developing the intervening territory.

W. B. Scott and associates have secured a tract of land directly west of the Fullerton Company's property and have a drilling rig in operation. All the other land in the vicinity has jumped in value, but is all taken up by lease or purchase. These developments are all west of Brea Canyon. East of the canyon, the Union brought in two excellent wells, but compared with the one mentioned above, they have not attracted much attention. One started off at 700 barrels and the other is showing for about a 500-barrel producer. Both are on the Stearns ranch. This company has five other wells which should be completed within the next 30 days. This is a field of big wells, and the possibilities are tremendous. That it will be one, or could be made one, of the largest producing fields in the State, there is no question. There are but twelve operating companies in the field, and three of these have only begun work. Compared with Coalinga or Kern River, with their hundreds of operating companies, Fullerton shows up wonderfully well.

The three companies which have just begun work are the W. B. Scott concern, mentioned above; the Syndicate Oil Company, drilling at the mouth of Brea Canyon; and the Olinda Land Company, which is running two strings in the extreme eastern limits of the field.

There has been no change in marketing conditions. The Union takes all the heavy oil it can buy, and does buy all except that of the Santa Fe, which uses its own oil, and that of the Fullerton Consolidated, which sells to the Standard. The light oil is mostly produced by the Puente Oil Company, for its own use, the Union taking the surplus. The price averages about 75 cents.

WHITTIER FIELD.

Nothing exciting has happened in this field recently, except the periodical report that the Central Oil Company had struck another 500-barrel well. This is its No. 52, located 400 feet northeast of the old development. The oil sand is said to have been struck at 1,235 feet and continued to a depth of 1,960 feet, at which depth the well was perforated. The capacity of the well has not been determined yet, but it is expected to make a fair producer. This is one of the group of high-gravity producers, which, although small, are valuable on account of the quality of the product. The Central's operations seem to indicate that somewhere on its property there is an immense body of oil, but during ten or twelve years of drilling it has not yet struck it. It is not much out of the way to say that a 100-barrel well is high-water mark—or high-oil mark—on the property. But if absolute confidence in one's property and perseverance will find that main body of oil, the Central stockholders may rest assured it will be found.

The fact is, the Whittier field has never been a field of big wells. A 100-barrel performer is a good one, and there are only a few of these. The Murphy Oil Company is reported as getting some big wells on the southern section of the property.

There is no change in the market here. All the oil is sold or used by the producers in their refineries as soon as it is produced, and none is going into storage. The Murphy and Turner both refine their own oil, and the output of other companies is much sought by the several Los Angeles refineries. For this reason, the price is slightly higher than that of other fields.

RECENT PATENTS.

The following patents recently granted, of interest to the oil trade, are reported expressly for "The California Derrick" by J. M. Nesbit, patent attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Gas-producing apparatus, Georges Marconnet, Paris, France, 906,441.

Self-measuring oil pump, Geo. F. Welch, Fort Wayne, Ind., 906,478.

Well-blower, Jos. H. McEvoy, Houston, Texas, 906,733.

Oil-supply apparatus, Frank E. Nelson, Los Angeles, Cal., 906,735.

Process of producing gas, Chas. J. Greenstreet, Alton, Ill., 906,793.

Gas-producer, Josef Maly, Dresden, Germany, 906,812.

Gas-machine, Frederick Schmitt and Jno. W. Neumann, St. Louis, Mo., 906,940.

Apparatus for producing gas, Forest E. Fink, Cortland, Ohio, 907,110.

Pump-operating mechanism, Francisco G. Bascolo, Buenos Ayres, Argentina, 907,452.

Drill, Jno. D. Tully, Pearl, Colo., 907,540.

Gas-making apparatus, Orville H. Ensign, Los Angeles, Cal., 907,688.

Oil or thermal cut-out, Chas. N. Pratt, Rochester, N. Y., 907,872.

Oil-switch, Johan B. Opsahl, Chicago, Ill., 908,123.

Oil-pump lubricator, Leopold Kassander, New York, and Edgar A. Kelsey, Mount Vernon, N. Y., assignors to Nathan Mfg. Co., New York, 908,274.

IMPERIAL PAYS A DIVIDEND OF $60,000.

The Imperial, of Kern River and Coalinga, paid its first dividend in fourteen months on the 6th inst., says the "Times." Sixty cents a share, or $60,000 in all, was paid out. This company formerly paid every month from receipts at Kern River. For the last year it has been drilling prospect wells in the extreme northeast of Coalinga, and it is supposed that this expense stopped the stockholders' money temporarily. Its oil has been sold to the Southern Pacific for years.

Exports of Mineral Oil for October, 1908

CUSTOMS DISTRICTS	MINERAL OIL CRUDE		MINERAL, REFINED OR MANUFACTURED							
			Naphthas, Etc.		Illuminating		Lubricating		Residuum	
Alaska	.....	.....	1,550	444	1,670	443	4,343	955	.....	.....
Hawaii	.....	.....	.....	.....	80	19	.....	.....	.....	.....
Puget Sound	728,260	9,118	16,141	2,602	1,573	257	13,010	2,223	3,907	300
San Diego	.....	.....	.....	.....	420	74	50	36	1,870	181
San Francisco	.....	.....	9,609	1,725	10,061,905	454,197	42,572	10,295	.....	.....
Total	728,260	9,118	27,300	4,771	10,065,648	454,990	59,975	13,509	5,777	481
Shipments to Alaska										
From Puget Sound	39,800	1,345	48,110	7,321	27,517	5,860	4,160	1,778	.....	.....
San Francisco	1,386,105	19,807	50	11	625	122	120	40	.....	.....
Shipments to Hawaii										
From Los Angeles	672,000	12,800	.....	.....	5,400	486	.....	.....	.....	.....
San Francisco	764,000	25,200	24,259	2,730	124,470	19,338	15,383	3,772	.....	.....
Shipm'ts from East'n Ports										
Baltimore	.....	.....	5,100	1,621	.....	.....	420,118	64,486	1,191,728	47,669
Boston and Charlestown	.....	.....	9,150	1,128	4,983	750	21,164	5,022	.....	.....
New York	7,183,403	439,606	1,195,362	142,875	50,666,887	3,456,388	8,945,576	1,150,979	9,000	704
Philadelphia	1,494,143	123,598	3,259,397	277,366	30,396,541	1,824,561	3,380,600	348,864	3,440,688	119,530
Galveston	.....	.....	250	37	.....	.....	26,126	10,156	.....	.....
Sabine	2,711,053	61,933	.....	.....	8,551,613	383,339	992,237	66,810	3,542,738	124,100
Total	11,388,599	625,137	4,469,259	423,027	89,620,024	5,665,038	13,785,821	1,646,317	8,184,154	292,003

DECEMBER ON GULF COAST.

Estimates of Gulf Coast production in December make the daily average output 42,204 barrels, as compared with movement and estimated consumption amounting to 40,985 barrels a day. The surplus for the month is put at 37,773 barrels, or an average of 1,219 barrels a day. November production averaged 47,902 barrels a day, and movement and consumption 45,945 barrels. A surplus of 58,685 barrels was indicated in November. The decline in output recorded last month was due to decreased production in all the Gulf Coast fields. Vessel shipments of Gulf crude from Port Arthur and Sabine averaged 4,758 barrels a day in December as against 7,826 barrels a day in November. Car shipments from South Texas points averaged 19,959 barrels a day in December as against 18,511 barrels a day in November. Car and pipe line shipments from Louisiana points averaged 10,186 barrels a day in December as against 12,235 barrels a day in November. Stocks of Gulf crude on January 1 were estimated at 3,225,764 barrels.

The Crude Oil Market.

The only change in the Gulf crude market since the December 20 report is an advance of 4 cents in the credit balance price of Spindletop oil, posted by the Sun Company on December 26, making the quotation 60 cents. Spindletop crude is in demand for refining purposes. In the other districts the market remains the same. The Texas Company is making three months contracts for the purchase of Humble, Saratoga and Sour Lake crude at 55 cents. Several contracts for longer terms are reported at the same figure. The market for oil on cars is 60 to 62 cents at Humble and Sour Lake, and about 10 cents higher at Jennings.

THE POSITION OF THE PEARSONS IN MEXICO.

The Start of an Oil War.

The vast and prolific fields of Mexico to-day provide an entirely new theatre for the latest war in the commerce of oil. What has taken place in these territories since the beginning of the year represents the first sensational move in a conflict of gigantic interests which will probably, in time, rage with a fury seldom witnessed even in this industry of keen competitive interests. Mexican developments already constitute one of the most romantic chapters in the history of the world's oil field and the business of disposing of their colossal output, says the Petroleum World.

British finance directly risked in this war must be between $10,000,000 and $15,000,000. Long before anyone expected that the oil fields of the Republic would be developed on a record scale even for the American continent, British capital was put behind properties with anything but satisfactory results. The millions only went into the country with the Pearsons, and anyone who has a knowledge of the market-disturbing influence of big finance boldly thrown into a centre of petroleum activity will not be surprised if old-established interests fight for a retention of their markets and work with increased energy for the extension of their producing and transport facilities. That is just what the Waters Pierce Company is doing.

There is nothing unnatural about this fight; moreover, it is being fought on neutral ground, and the heads of the Waters Pierce Company will be the first to frankly and generously admit that the Pearsons, if they cut fair and work along proper lines, will be entitled, as the result of their courage and enterprise, to a position in the oil industry of the Republic. Much will depend upon their methods of warfare. There is no combination of British interests; the other British companies—and, indeed, all the companies operating in Mexico—are keeping their businesses out of the war between the Waters Pierce Company and the militantly-named Eagle Oil Company of Pearson and Son. The fight is between the Waters Pierce and the Pearsons; they, and they alone, have possession of the stage, and it is nonsense to talk about competition by such a concern as the Mexican Petroleum Company, which has holdings adjoining the Dos Bocas property of the Pearsons, but does not sell refined oil.

Those who are following events will form the opinion that much bad blood must necessarily be created by the wholesale transference of managers and agents from the Waters Pierce Company to Pearson and Son. This attractive seduction of managerial experience is not an uncommon feature of oil warfare, but the oldest oil men in America will fail to recall an instance where it has been effected with such a display of public excitement and triumph. It is a policy which does not make for peace.

The Dos Bocas Well.

People are still greatly interested in the well which has given Mexico, a great name in oil. The Pearsons say the well flows 15,000 barrels of oil and millions of barrels of salt water daily. They have abandoned it—for the time being, at least—and the agent, who was in charge at the Dos Bocas, left for Vera Cruz, where he sent a report to the offices of his company. A great dam diverts the flow of bituminous matter, which now goes towards the Laguna de Tamaiahua, and the space between the well and the Laguna de Tamaiahua is a lake of black bituminous mud. When the well was in full blast the gas fumes were noticeable at Tezuitlan, a hundred miles away, while the reflection from the flames when the well was burning could be plainly seen from the same place. More than $500,000 was fruitlessly spent in the efforts to check the flames and save the output.

Before the Dos Bocas was blown in, the Pearsons had sunk there four other wells, which were capped as soon as brought in. These have not been uncapped since the fire, and it is not known whether there will be a flow from them or not. The company will sink another well a short distance from the Dos Bocas.

The field work of the Pearsons includes operations at Los Esteros, fifty miles from Tampico, on the Montrey branch of the Mexican Central, where drillers, working day and night, are putting down two wells. Work is likewise being carried on day and night in the Tuxpam district, where two other wells are being drilled. Four separate camps are working at wells on the Isthmus of Tehuantepec, while others are in the State of Tabasco.

The Pearsons are exporting oil; they recently sent three separate cargoes of 3,000 tons each of refined oil and gasoline from the Minatitlan refinery to the English market, and a fourth steamer follows. This means competition on this side of the Atlantic, and they have already entered into an arrangement with a British house which owns oil storage and distributing facilities in this country.

Extension of Operations.

A Guadalajara report states that the Pearsons are about to carry the war into that part of Mexico. Pearson oil has been shipped to the city, and it is said that they intend to establish storage facilities and distribute to other points from Guadalajara. Meanwhile, the Waters Pierce Company is putting $3,000,000 worth of improvements in the refinery at Tampico. Ten new stills are going up, with eight more to follow, and there is plenty of additional ground for future operations. The Company has now twenty-eight stills working, and is acquiring leases and oil lands in the States of Vera Cruz, Tamaulipas and San Luis Potosi.

The sale of 5,000 acres of oil land, lying below Tampico, and adjoining Tuxpam, by Mr. George I. Ham to New York parties, currently reported to be Harriman interests, of New York, has been made public, and another sale of 2,000 acres adjoining the Ebano oil fields has been made to Texas parties. The fields lying in the Huasteca Potosina, near Tancanhitz, are to be exploited by a company organized by General Manuel Sanchez Rivera, who holds the power-of-attorney for the Indian land owners in the oil-bearing zone.

FLASH TEST OF RUSSIAN OIL.

The proposition to lower the flash point of Russian illuminating oil sold for export, is vigorously opposed by some of the Russian technical and official journals. One of them declares that the present high flash point guarantees safety to the consumer, and that to lower it would rob Russian petroleum of its reputation abroad. The naphtha manufacturers also object to the suggestion, on the ground that it would reduce the extraction of these parts of the naphtha which go to make "motor benzine," and this might hamper the motor business. But this need not count; for it is a question simply of voluntarily lowering the flash point—not compulsory, so that such industrialists could regulate the product to suit the demand. The flash point is not only a measure of safety, but also indicates uniformity—homogencity—in the goods, and, therefore, their good quality. Kerosene containing benzine in quantity to reduce the flash point only two or three degrees, tends to smoke in the lamp, to draw the flame and produce other very unpleasant results, which is confirmed by photometric observation. Any steps to regulate the kerosene trade by depreciating the quality of the product, will be attended by results disastrous alike to consumers and dealers.

RECORD IMPORTATIONS AT HANKOW.

The British Consul at Hankow, speaking of the kerosene trade for the year 1907, states that the small stocks left at the end of 1906 led, as was expected, to a record importation of kerosene oil. American oil contributed about sixty-nine per cent and Sumatran with resumed arrivals of oil in bulk jumped from 30,000 to 825,980 gallons. The Russian case oil was all shipped from Shanghai. Actual business showed rather a decrease than improvement owing to the interior marts beginning the year with full stocks. Sumatran and Russian oils were dealt in to about the same extent as in 1906, but the Borneo product, the price of which this year differed less from that of American bulk oil, did not command so large a sale.

Stocks are computed at 6,400,000 gallons, against 2,500,000 gallons at the end of 1906. The Asiatic Petrolcum Co. (an Anglo-Dutch combination which deals with both Bornean and Sumatran oil and has two installations) and the Standard Oil Co. of New York each added another petroleum storage tank during the year.

SUNSET, MIDWAY, McKITTRICK.

Work is progressing nicely on the Lady Washington wells Nos. 1 and 2. No. 1 is over 700 feet deep and working smoothly. The blue clay was found in this well at 608 feet. No. 2 is still working with the 10-inch pipe at a depth of over 1,300 feet.

The La Blanc is down something over 800 feet, and is pushing operations vigorously, with every indication of striking oil in the next few hundred feet.

The new well on the Midway Crude has been perforated and promises to be a good producer. During the time it was idle waiting for water, something like 1,000 feet of oil had seeped in.

The water trouble at Midway promises soon to be relieved, as two companies are arranging to bring water from a considerable distance. Both systems will be needed, as operations throughout the district largely wait upon a supply of water.

A big well is reported to have come in on the Section 25 property, it being No. 4. Another well, Mascot No. 8, brought in several months ago, has settled down to 400-barrel production. No. 10 was recently brought in and is reported to be one of the best on the property.

The Brookshire Oil Company, of San Luis Obispo, has secured Section 34 in 31-22, Northern Midway, and will shortly begin four wells. F. J. Burns is general manager and S. A. Johnson superintendent. The Brookshire has been one of the steady producers and dividend payers of Santa Barbara County.

The Union Tool Company will erect a machine shop in the Midway field. Plans have been drawn for a building 50x100 feet and the equipment for service will be complete and modern in every respect.

The Templor Ranch Oil Company reports bringing in its new well, No. 7. The first sand was encountered two weeks ago, the drill passing through seven feet of sand at 130 feet. The main sand was found at about 300 feet, and the well is making considerable sand and much oil, without any water. The favorable outlook for the company is such that another well will be commenced at once.

The Carolina Oil Company was recently organized to operate on Section 10 in 32-31 in the McKittrick field. The organizers are H. A. Hopkins, R. S. Rains, H. B. Phelan, C. A. Collins, John T. Jacobs, and J. W. Hendrickson.

The Homestead Oil Company, of Los Angeles, will shortly begin drilling operations about twelve miles north of the Templor Ranch Company's wells. The company also has 160 acres in the Devil's Den district. The officers of the company are E. A. Weaver, president; H. J. Brainerd, vice-president; R. A. Howland, secretary; A. G. Ockenden, treasurer; with M. E. Hammond, second vice-president.

ANNUAL MEETING UNION OIL CO.

The annual meeting of the stockholders of the Union Oil Company and the various subsidiary and parent companies was held at Oleum January 21st. The officers and directors of the Union Company for the ensuing year are Lyman Stewart, president; W. L. Stewart, vice-president; J. S. Torrance, vice-president; W. W. Orcutt, treasurer; the other directors being E. T. Earle, Frank Garbutt, James H. Adams, W. R. Staats, F. C. Bolt, Giles Kellogg and Donzel Stoney, Mr. Stoney being elected a director in place of John Baker Jr., who resigned as an officer of the Company.

The report for the past year will be sent to stockholders in the course of the next few weeks and will not be made public until that time. From this report it will be learned that the net profits increased upwards of 50 per cent from the preceding year, amounting to more than $3,000,000.

The profits of the Union have been increasing at this proportionate rate for the past three years and the coming year promises even greater prosperity on account of prevailing conditions. The present year promises to be a peaceful one in all respects for the Company as it has fought its way up year after year and has now become intrenched in an almost impregnable position so far as its relation to the source of supply of oil and the markets of this State and the world.

Mr. D. M. Speed, formerly engaged in public accounting in San Francisco, has opened an office in Coalinga, where he will act as corporation secretary, bookkeeper, transfer agent, field secretary and in other capacities for outside corporations.

NEW INCORPORATIONS.

Los Angeles, Cal.—The London Petroleum Company has been organized here with a capital stock of $1,000,000. The directors are W. H. Shaw, P. C. Garrett, and L. M. Sleeth.

Bakersfield, Cal.—The North McKittrick Oil Company has been incorporated in this city with a capital stock of $500,000. The directors are, J. T. Jacobson, E. J. Sullivan, F. Hall, E. H. White and W. B. Beaizley.

Bakersfield, Cal.—The Kern Midway Water Company has been incorporated by J. H. Sheridan, J. M. Dunn, F. M. Worthington, S. V. West and T. M. Young.

Hanford, Cal.—The Uno Oil Company with a capital stock of $25,000, has been incorporated here by W. C. Reilly, R. L. Peeler, E. A. Webb, A. E. Webb and E. W. Robinson.

Fresno, Cal.—The Nevada Petroleum Company has been incorporated here with a capital stock of $1,000,000 by M. L. Requa, F. W. Bradley, J. S. Wallace, A. C. H. Fletcher and C. A. Norris.

San Luis Obispo, Cal.—The North Alamo Oil Company has been incorporated here with a capital stock of $200,000. The directors are C. A. Adams, Thomas Preisker, W. C. Oakley, C. L. Preisker and C. W. Smith.

Hanford, Cal.—The Carrie Nation Oil Company has been incorporated in this city with a capital stock of $25,000, by L. H. Byron, J. H. Freer, A. J. Whitesides, A. B. Buckner, and F. P. McAdam.

Los Angeles, Cal.—The Tidewater Crude Oil Company, with a capital stock of $3,000,000, has been incorporated by W. E. Donaghoe, L. O'Neal, R. H. Burton, W. O. Emerson, W. M. Hiatt, B. K. O'Neal and F. L. Emerson.

Los Angeles, Cal.—The La Costa Oil Company has been incorporated in this city with a capital stock of $1,000,000, by R. A. Blair, G. E. Banks and J. W. Whitham.

Bakersfield, Cal.—The Bed Rock Oil Company has been incorporated in this city with a capital stock of $50,000 by B. T. Dyer, Mrs. Mable H. Dyer, O. G. Myers, Mrs. M. P. Myers and W. L. Leland.

Bakersfield, Cal.—The Arica Oil Company has been incorporated here, capital stock of $500,000, by G. Sheridan, W. A. Sloan, R. T. Fisher, L. E. Westrich and W. E. Buck.

Pasadena, Cal.—The Pasadena Rapid Transit Company has been organized in Pasadena with a capital stock of $3,000,000, by G. H. Hayes, W. H. Smith, E. J. Sheehan, D. C. Porter and Mr. Dobbins.

San Francisco, Cal.—The Templor-McKittrick Oil Company has been incorporated in this city with a capital stock of $3,000,000, by J. H. Hollywood, F. A. Anderson, W. N. Howes, N. F. Wilson and J. H. Jordan.

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COALINGA, CAL.

Los Angeles, Cal.—The Los Angeles-Kern Oil Company has been incorporated in this city with a capital stock of $400,000. The directors are A. E. Halsey, A. W. Ross, E. S. Gatch, G. G. Gatch and D. C. Hammell.

Los Angeles, Cal.—The Provident-Midway Oil Company, with a capital stock of $250,000, has been incorporated in this city, by T. O. Turner, W. Le Moyne Mills, L. B. Howe, C. R. Foster and E. D. Foster.

San Francisco, Cal.—The Nevada Petroleum Company has been incorporated here, with a capital stock of $1,000,000, shares $10 each, and $5,000 subscribed, by M. L. Requa, F. W. Bradley, J. S. Wallace, A. C. B. Fletcher and C. A. Norris.

Bakersfield, Cal.—The Adeline Extension Oil Company has been organized here with a capital stock of $10,000, the directors being C. A. Barlow, W. H. Hill, Charles Dickinson and C. L. Claflin.

Santa Ana, Cal.—The Coyote Hills Oil Company has been incorporated with a capital stock of $900,000, by C. V. Hall, John Sharp and others.

LATEST QUOTATIONS.

	Bid.	Asked.
Associated Oil Tr. Cer	$37 00	
Brookshire	1 55	
Caribou	12 00	
Chicago Crude	07	
Claremont		$1 75
Daisy	25	
Euclid	50	
Four	34	
Fulton	2 00	
Globe	15	
Illinois Crude		30
Junction	65	75
Kern	25	
Linda Vista		60
Lucile	9 00	
McKittrick	40	
Monte Cristo	1 80	2 05
Mountain Girl	24	30
Occidental	25	
Paraffine	34	
Peerless	5 60	
Piedmont	19	
Pinal	10 00	
Producers'	2 27½	
Record	2 00	
Rico	1 05	
Royalty	2 40	
S. F. & McKittrick	23 00	
Sauer Dough	1 50	2 12
Section 25	11 50	
Shawmut		80
Sovereign	25	27
S. W. & B.	40	75
Sterling	4 55	5 00
Sunset Monarch	60	
Superior	20	
Thirty-Three	2 00	
Turner	40	60
Union	103 00	
Wabash	1 00	
Wolverine	25	
W. K. Oil Co	1 20	1 50

OIL NOTES.

Operations in the Mingo, Ohio, oil field are practically at an end. The limits of the pool, it is believed, have been reached in every direction and the few tests which are now being made in advance of development are considered unimportant, although there is still considerable interest manifest in the test being drilled on the Adams farm southwest of the village. Reports from that quarter are favorable and if the well which is due to hit the sand in a few days is a producer the promoters will have a new era for operations. Oil men, however, haven't much hope of extending the pool in that directions. North Hill, the scene of the first oil excitement in the Mingo pool, is a thing of the past, and the McLister avenue part of the field is on a rapid decline. Developments in that portion of the pool are nearing a close, the latest completion being the Estella Company's No. 2, which is a fifteen-barrel pumper on the Maji lot. The production of the field is now estimated at about 900 barrels a day, somewhat greater than the Follansbee pool, which is also draining out rapidly.

Corsicana field has been producing twelve years, and its total production for that period is 5,113,020 barrels. Powell has been producing eight years, and its total production is 1,726,425 barrels; Spindle Top has been producing seven years and its total production is 37,392,594 barrels; Sour Lake has been producing six years and its total production is 23,208,514 barrels; Saratoga has been producing four years and its total production is 8,244,909 barrels; Henrietta has been producing four years and its total production is 299,056 barrels; Batson has been producing five years and its total production is 19,140,157 barrels; Dayton has been producing three years and its total production is 261,180 barrels; Humble has been producing three years, and its total production is 22,096,597 barrels; Matagorda field has been producing four years and its total production is 210,907 barrels; Hoskins Mound has been producing two years and its total production is 84,591 barrels. The production of other fields is 13,354 barrels.

The worst floods ever known are reported from the Oklahoma oil fields. Railroad traffic is demoralized and the pipe line transportation is in the same condition. Field work has been practically suspended. The floods of last spring were something unprecedented, but the present rainfall surpasses all previous records.

Forest Commissioner J. S. Whipple, of New York, has asked the public service commission to require the adoption of oil instead of coal as fuel on engines running into or through the forest preserve of that State and to adopt such other devices and precautions against setting fires, as the public interest plainly requires. He reports that ninety-five per cent of the forest fires are set by locomotive sparks, and that during forty days 300 fires have been started by sparks within the forest preserves.

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See Harper's Weekly, Oct. 3, 1908

Patent Serial No. 450,294 August 25th

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Vol. 1 San Francisco, Cal., February, 1909 No. 12

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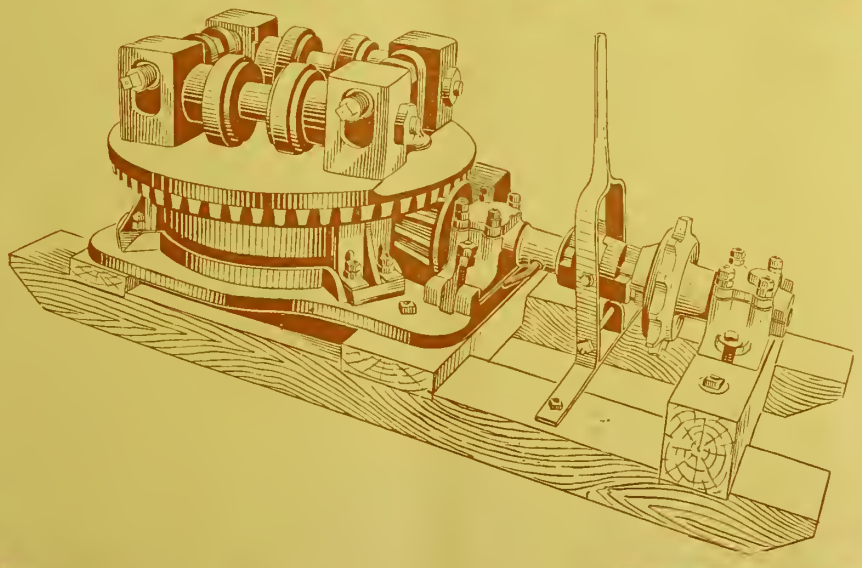

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THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 1 San Francisco, Cal., February, 1909 No. 12

ON THE PROPERTIES OF JAPANESE PETROLEUM

By K. KOBAYASHI

Translation Revised by N. M. COOPER

The present industry of lubricating oil is not so important, but it is certainly a very interesting and necessary subject to investigate. At present a large percentage is used for liquid fuel only.

Intermediate oil from the crude oil is washed with sulphuric acid and caustic soda and finally filtered with "acid clay," which is produced at Kambarba, Echigo, according to my patent process, and used as a mixer for other lighter kerosenes. This acid clay has stronger decolorizing powers than fuller's earth or Florida earth. I will describe my investigation of this clay in another subject.

On the Kitano Petroleum.

The properties of the Kitano petroleum oil differ widely from the above three petroleums, but somewhat resemble the following two, Hara and Ojiya. The oil is of lampblack brown color. Its specific gravity is 0.871 at 15.5° C. The results of fractional distillation are as follows, each fraction being one-tenth of the crude oil by volume:

No. of Fractions.	Specific Grav.
1st product	0.7840
2d product	0.7992
3d product	0.8191
4th product	0.8311
5th product	0.8489
6th product	0.8538
7th product	0.8890
8th product	0.9040
9th product	0.9188

By fractional distillation referring to boiling point, the following results are obtained:

Fractions.	Per Cent.
Under 150° C.	10.5
150° C. to 200° C.	25.0
200° C. to 250° C.	23.0
250° C. to 300° C.	25.5
Above 300° C.	26.0

The oil contains 0.094% of sulphur and 0.166% of nitrogen. The iodine absorption value of Huble's method is 3.319. The oil contains 10.0% of resinous matter. Coefficient of expansion is 0.000083. The oil contains large quantities of vaseline and paraffine. The heavier fraction above 360° C. solidifies at ordinary temperatures, having about the consistency of butter. Solid paraffine separates as scaly fragments by treatment with petroleum benzine. Vaseline and paraffine were separated from the oil residuum, which was estimated at 8% of the crude oil. This was carried out as follows: The dark yellowish residuum was at first filtered through charcoal in a hot filter, and then a pale yellowish, butter-like mass was obtained. And two different paraffines were distinctly separated by adding the petroleum benzine drop by drop to this mass, the one dissolving easily and passing into solution, while the other remained in the state of scaly fragments. I have filtered this and obtained both the scaly paraffine and the filtrate. The scaly fragments thus separated, being dissolved in ether and the latter expelled, a white, hard paraffine, which melts at about 45° C., was obtained. The solvent from the above filtrate was expelled, then the yellowish, amorphous, butter-like vaseline was obtained, the melting point being about 30° C.

As the production of the Kitano oil is not as much at present, the fractionation is carried out in one of the refineries as follows: Light oil, 4.2%; light burning oil, 8.4%; burning oil, 40.0%; heavy burning oil, 12.6%; residuum and loss, 34.8%. Second-class burning oils are made by mixing the above light and heavy burning oils.

Generally speaking, the Kitano oil is not of good quality for burning oil. Both in practice and laboratory experiments, the parallel products of this oil do not give equal illuminating power compared with the oils from Higashiyama and Nishiyama. Some difference must exist in the chemical composition of the Kitano (Kubiki) and the latter two oils above. The peculiarities of the Kitano oil cannot be explained until we have determined the percentages of C and H of some definite fractions obtained by precise fractional distillation under diminished pressure, or until we have estimated the nitrogen contents by combustion. But considering the properties of the burning oil from this source, it will be seen that this crude oil probably contains hydrocarbons rich in C. such as Cn H_{2n}. If this be so, then the method of refining now in use will need many improvements. There are many questions concerning the Kitano oil to be solved.

Higashyama, Japan, Oil Field

On the Hara Petroleum.

This oil is of light blackish brown color, and gives a characteristic odor. Its specific gravity is 0.8173 at 15.5° C. The results of fractional distillation are as follows, each fraction being one-tenth of the crude oil by volume:

No. of Fractions.	Specific Grav.
1st product	0.7380
2d product	0.7565
3d product	0.7725
4th product	0.7848
5th product	0.7964
6th product	0.8129
7th product	0.8353
8th product	0.8597
9th product	0.8750

By the fractional distillation referring to the boiling point, the following results are obtained:

Fractions.	Per Cent.
Under 150° C.	41.2
150° C. to 270° C.	43.8
Above 270° C.	15.0

When the fraction under 150° C. is redistilled, it gives the following results:

Fractions.	Per Cent.
Under 170° C.	1.0
70° C. to 80° C.	1.2
80° C. to 90° C.	6.8
90° C. to 100° C.	5.0
100° C. to 110° C.	6.0
110° C. to 120° C.	6.0
120° C. to 130° C.	4.4

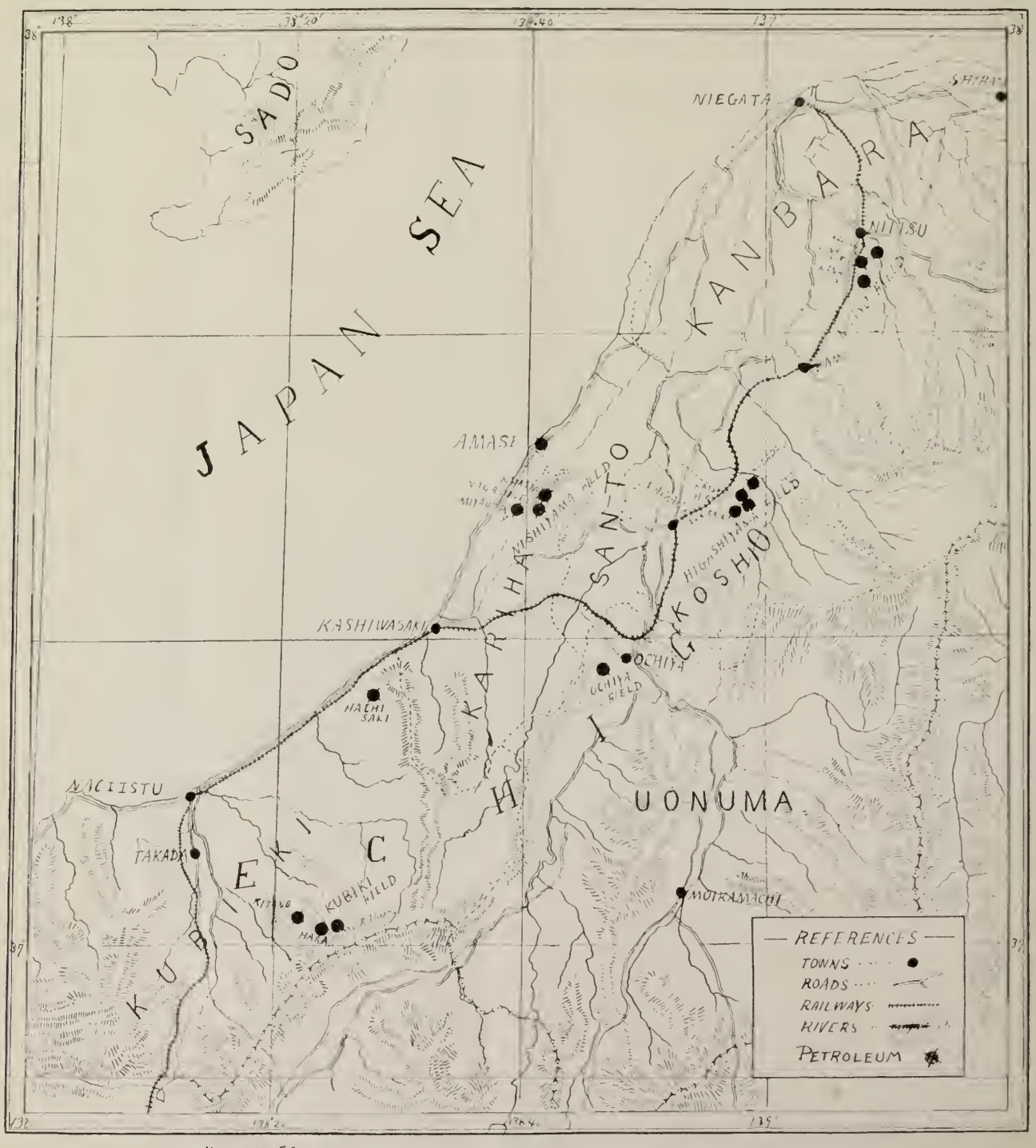
130° C. to 140° C. 5.2
140° C. to 150° C. 5.2

The oil contains 0.083% of sulphur and 0.099% of nitrogen. The iodine absorption value is 1.534. The oil contains 5.0% of resinous matter. Coefficient of expansion is 0.000088. The oil contains a small quantity of vaseline and paraffine. The fraction which distills off above 360° C. solidifies at about 10° C. I have separated vaseline and paraffine from the oil by the method described under the Kitano petroleum. I have examined the products from both Hara and Kitano petroleum respectively, which I have obtained by the above fractional distillations. Color, odor, flashing point, and solidifying point of each fraction were compared after purifying them with combined sulphuric acid and caustic soda respectively. Also the bromine reaction and the behavior toward sulphuric acid, nitric acid, etc., were tested. And finally I arrived at the conclusion that the Hara petroleum has similar properties to the Kitano petroleum, although the crude oils differ rather widely in their specific gravity.

On the Ojiya Petroleum.

The oil from Ojiya is of pale amber color and the specific gravity is 0.8033 at 15.5° C., thus showing it to be the lightest oil among the various specimens which I have examined. The results of fractional distillation are as follows, each fraction being one-tenth of the crude oil by volume:

No. of Fractions.	Specific Gravity.
1st product	0.7047
2d product	0.7358
3d product	0.7512
4th product	0.7641
5th product	0.7833
6th product	0.7979
7th product	0.8250
8th product	0.8591
9th product	. . . .



By the fractional distillation referring to the boiling point, the following results are obtained:

Fraetions.	Per Cent.	Speeific Gravity.
Under 150° C.	52.4	0.7557
150° C. to 200° C.	18.7	0.8271
200° C. to 250° C.	9.7	0.8510
250° C. to 300° C.	11.1	0.8998
Above 300° C.	8.1	....

When the fraction under 150° C. is redistilled, then the following results are obtained:

Fractions.	Per Cent.	Specifie Gravity.
Under 60° C.	0.72	0.6487
60° C. to 70° C.	1.80	0.6878
70° C. to 80° C.	3.55	0.7151
80° C. to 90° C.	8.80	0.7381.
90° C. to 100° C.	11.20	0.7590
100° C. to 110° C.	4.60	0.7650
110° C. to 120° C.	7.00	0.7745
120° C. to 130° C.	3.80	0.7902
Residue	5.60	0.8006

The oil contains 0.035% of sulphur and no nitrogen. The iodine absorption value by Huble's method is 0.731. The oil contains 2.5% of resinous matter. After agitation with concentrated sulphuric acid, the oil has a specific gravity of 0.7880. By this means, pale yellowish oil was obtained. And the loss due to treatment was 8.0%. Coefficient of expansion is 0.000099.

I have redistilled the residuum, which does not contain any fraction under 150° C., and obtained nine fractions. This residuum also contains a small quantity of vaseline and paraffine, as do the Kitano oils and the Hara oils. Moreover, by further comparison. I have arrived at the conclusion that the Ojiya petroleum has similar properties to the Kitano oil, although its specific gravity, etc., differ widely from the latter. The Ojiya petroleum will be a good material as a source of benzine, but there are very few refineries for this purpose. The boiling point of definite fractions of all Japanese petroleum does not correspond to that of Pennsylvania petroleum with corresponding density. In other words, Pennsylvania petroleum has a low density and a high boiling point, compared to the parallel products of Japanese petroleum. These considerations should not be neglected when refining the various grades of petroleum benzine from the Ojiya petroleum.

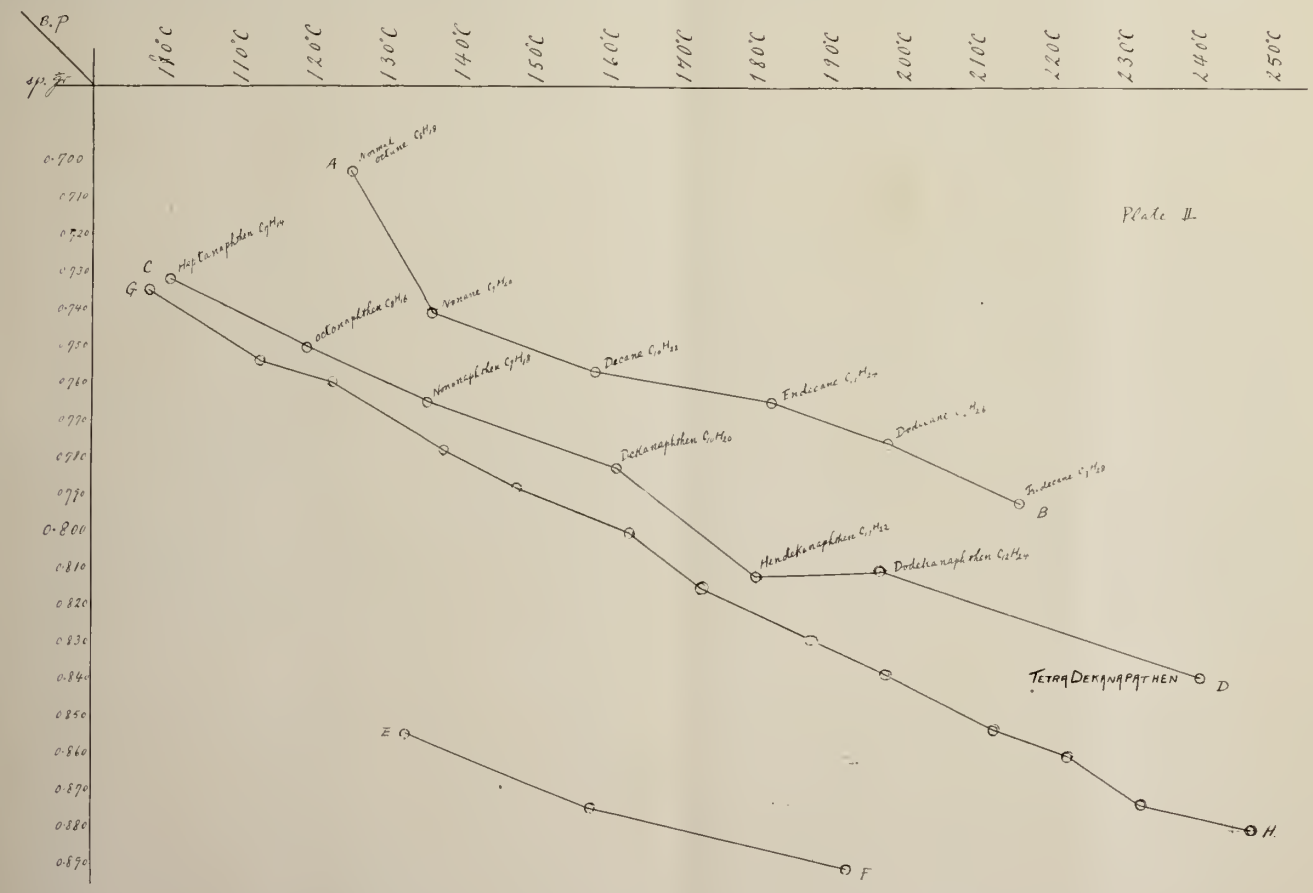
On the Formosa Petroleum.

This oil is of amber color, not transparent at 14° C. Its specific gravity is 0.8368 at 15.5° C., flashing point being 58° F. The results of fractional distillation are as follows, each fraction being one-tenth of the crude oil by volume:

No. of Fraetions.	Specifie Gravity.
1st produet	0.7583
2d product	0.7784
3d produet	0.7884
4th produet	0.7943
5th produet	0.8153
6th produet	0.8250
7th produet	0.8434
8th product	0.8653
9th product	....

By fractional distillation, referring to the boiling point, the following results are obtained:

Fractions.	Per Cent.	Specific Gravity.
Under 100° C.	0.6	0.7469
100° C. to 125° C.	11.0	0.7730
125° C. to 150° C.	14.2	0.7935
150° C. to 175° C.	12.3	0.8079
175° C. to 200° C.	15.6	0.8212
200° C. to 225° C.	8.0	0.8421
225° C. to 250° C.	18.6	0.8532
250° C. to 275° C.	14.0	0.8601



A–B PENNSYLVANIA OIL
C–D BAKU OIL

E–F TEXAS OIL
G–H NISHIYAMA OIL

Yield of light oil, kerosene, and heavy oil is as follows:

Light oil	25.8%
Kerosene	68.5%
Heavy oil	5.7%

This heavy oil is of a yellowish brown color and has the consistency of butter. This heavy oil contains vaseline and paraffine as Kitano petroleum.

The relations between boiling point and specific gravity of distillate are as follows:

Fractions.	Specific Gravity.
125° C. to 150° C.	0.7977
150° C. to 175° C.	0.8038
175° C. to 200° C.	0.8226
200° C. to 225° C.	0.8474
225° C. to 250° C.	0.8664
250° C. to 275° C.	0.8760

Considering these results, the Formosa petroleum resembles the Kitano, Hara, and Ojiya petroleum. Unfortunately the sample of this crude oil was not sufficient, so could not examine or make a further investigation.

Conclusion.

The properties of the above-mentioned crude petroleum are

shown by the two following tables. Plate 3 shows the percentage of sulphur and nitrogen, iodine absorption value, and coefficient of expansion, etc.

I cannot say much about the nature of Japanese crude petroleum, because I have not yet finished the determination of percentage of C and H. For combustion analysis, it is most important to collect the same parallel products by fractional distillation under diminished pressure.

Considering the relation between boiling point and specific gravity of the Nishiyama distillate above mentioned, it is a fact that all Japanese petroleums resemble the Russian petroleum, and not the Pennsylvania petroleums. Moreover, I have compared the specific gravity of each parallel product of Japanese, American and Russian petroleum. Each fraction distilling from 195° C. to 315° C. was obtained after four times being carefully repeated fractional distillations of each crude petroleum. Each specific gravity of the fraction after purification with concentrated sulphuric acid was compared, and the results were as follows:

American burning oil	0.7766
Russian burning oil	0.8089
Japanese crude oil, "Higashiyama"	0.8142
Japanese crude oil, "Nishiyama"	0.8178
Japanese crude oil, "Kubiki"	0.8145
Japanese crude oil, "Niitsu"	0.8200
Japanese crude oil, "Oyiya"	0.8199

Also it will be seen that there are some differences in composition between the crude oil from the northern Echizo and the southern Echizo. Probably all Japanese petroleum consists of naphthene hydrocarbon, but some of them contain other hydrocarbons richer in carbon. I conclude from my investigations that there are two types of crude oil:

1. Nishiyama crude (Northern Eschizo): Nishiyama, Higashiyama, and Niitsu oil fields.

2. Kubiki crude (Southern Eschizo): Kitano, Hara, Ojiya, and Formosa oil fields.

At present I am trying to collect parallel fractions for combustion analysis and determination of their molecular weight, etc., with a view to decide these questions for certainty. I intend to discuss the subject at some future date.

PLATE 3.

Results of Analytical Determinations.

Higashiyama	0.8971	0.3429	0.319	9.509	74
Nishiyama	0.8953	0.1360	0.255	5.151	72
Niitsu	0.9420	0.1540	0.411	8.052	66
Kitano	0.8710	0.0940	0.156	3.319	83
Hara	0.8173	0.0830	0.099	1.534	88
Ojiya	0.8033	0.0350	....	0.731	99

PRODUCTION OF PETROLEUM IN 1908.

A Preliminary Estimate.

The production of petroleum in the United States in 1908, according to a preliminary estimate made by David T. Day, of the United States Geological Survey, amounted to between 175 and 180 million barrels, an increase between 5 and 9 per cent as compared with the production of 166 million barrels in 1907. The total value of the product showed an even greater proportionate gain, for the price of oil increased in California and remained steady in other fields except the Gulf. The increases are attributed to steady growth in Illinois and California, though neither field showed phenomenal development.

The important features connected with the oil business in California in 1908 were increased production, consumption, prices, and shipments; decreased stocks; and extension of fields.

The value of California's oil production in 1907 exceeded that of any other mineral product, and the State was second in rank among the oil-producing States. From the best information available at the present time it is believed that the production in California in 1908 will aggregate between 44,000,000 and 46,000,000 barrels, exceeding that of 1907 by about 12 per cent. Nearly every district shared in this increase. This condition was brought about by the increasing demand and consequent higher prices for oil, which stimulated drilling, particularly in the Coalinga and Kern County districts. Much development work was carried on in Coalinga and the field was extended; in Kern County many new wells were brought in and many old wells which had not been pumped for several years were cleaned out and operated.

The completion of the pipe line in 1907 and the building of the railroad to Midway, together with the construction of the new rifled pipe line of the Associated Oil Company from Kern River to tide water, did very much to encourage drilling and increase production. The past year was one of greater activity in the Santa Maria field than ever before, but the output of this field, which in 1907 gave promise of being enormous in 1908, was considerably lowered by the presence of water. Some of the wells have an extraordinary yield and the field leads all others in the State in rate of production per well. More crude oil was shipped from the fields of Southern California in 1908 than ever before. The greater part of the oil exported from California comes from the Santa Maria field, its situation giving it command of the coast trade from Alaska to Chile and of foreign trade with Japan and Hawaii.

No new oil fields of importance were discovered in California in 1908, although petroleum was discovered in several places, one being near Mono Lake, in Mono County.

The Midcontinent Field.

Production is said to have declined generally in the Appalachian and Lima-Indiana fields, but the Midcontinent field held its own. In Colorado the production of the Florence and Boulder fields continued steadily during 1908, and much interest was aroused in the new Rangely field, in the northwestern part of the State.

Unprecedented floods in May and June and again in November wrought great disaster to pipe lines in Oklahoma. During the year also much damage was done by lightning, more than 100 tanks being struck and destroyed by fire, with a loss of more than 1,000,000 barrels of oil.

In Kansas and Oklahoma unusual activity was evident in the erection of small refining plants, many of them for the purpose of taking off light products from petroleum and selling the residuum for fuel oil or for use on roads.

Texas and Louisiana.

The decline in production in Texas, begun in 1907, continued in 1908, in spite of new finds south of the developed fields.

In Louisiana the chief event of the year was the withdrawal from entry of 6,500 acres of public land in the neighborhood of the Caddo field, pending a careful geologic examination by the United States Geological Survey, with a view to preventing a waste of natural gas that has been estimated at 75,000,000 cubic feet a day, or more than one-twentieth of the amount consumed in the entire United States. An investigation of the oil field in co-operation with the Geological Survey of Louisiana is now in progress, and additional information concerning it will be available this spring. Production in Southern Louisiana was steadily maintained.

UNION ANNUAL REPORT.

The Union Oil company's annual report shows net earnings of $3,022,932.85; dividends, $1,240,178, leaving as surplus, $1,782,754.85. The average per cent of net earnings for the last seven years was 15 per cent; allowed for depreciation of plant in that time, $1,154,829.01; dividends, exclusive of the special payment last August, $4,544,759.65.

The company's total land holdings are 234,315.02 acres, of which 164,049.35 are owned in fee, 59,577.38 leased, and 10,688.29 mineral claims, as follows. Ventura county, 65,915.17 acres fee, 9005.69 leased, 3968.29 mineral claims; Los Angeles, 8784.96 fee, 1703.43 leased; Orange, 3652.64 fee, 2536 leased; San Benito, 2726.39 fee, 640 mineral claims; Humboldt, 3168.20 fee; Santa Barbara, 77,901.73 fee, 8599.26 leased; Fresno, 400 fee, 160 leased, 1760 mineral claims; San Luis Obispo, 1459.35 fee, 4320 mineral claims; Kern, 40 fee, 7373 leased; San Bernardino, 6400 leased; Monterey, 23,000 leased; totals as above.

Of these the following lands were acquired during 1908; Santa Barbara, Bell estate, 3997.33 fee; Arellanes, 640 leased; one-half in stock of Casmalia Ranch and Development company, 2180 leased; Kern county, Blodget lease at Sunset, 7213 leased; Sans Souci at McKittrick, 160 leased; San Bernardino, Chino ranch, 6400 acres leased. Los Angeles, one-half interest in the Consolidated Petroleum on Wolfskill ranch (740 acres) 340 leased. The total acquired during the year is 20,960.33 acres, of which 3997.33 are fee lands, the remaining 16,963 leased.

The refinery business shows an increase of 83 per cent over 1907.

The total business of the San Francisco office and branches in the north was 98 per cent greater than in 1907. Receipts from asphalt sales declined, through lower prices, caused by Venezuela and Trinidad competition, not known in 1907, and the demand for other manufactured goods made the Oleum refinery devote most of its attention to these lines. New York sales about equalled the tonnage of 1907, and Chicago's increased. The asphalt output at the Bakersfield plant was slightly augmented. The demand for refined products is greater than can be supplied. Prices have been unchanged except gasoline which has been cut, through large importations of benzine from Sumatra.

Portland, next to San Francisco, shows the largest gains, 50 per cent. The refined products were first introduced here during the year. Seattle, where the Oleum manufactured goods have been sold since the beginning of 1907, enhanced its business 35 per cent. Stockton, Oakland and San Jose show good progress. Total sales were $8,167,840, of which the San Francisco territory sold $6,389,586.24, in which is included that sent to Portland and Seattle and all points north, the San Joaquin Valley, Hawaii, Guatemala and Chili. The Taltai station was opened last year in the latter country, and more stations are contemplated. The Panama business is under the jurisdiction of the Los Angeles office.

Not only did the transportation by the Union's own fleet increase 40 per cent over 1907, but the deliveries to other ships of new business was equal to 35 per cent of the amount transported in 1907. Efficiency was increased by bringing two Atlantic boats around the Horn and by the overhauling of the Santa Maria and the Santa Rita. The Argyle was fitted to carry refined oil in bulk. A new barge has been ordered for San

Francisco bay service. The Santa Paula and two smaller barges are employed in fuel deliveries on San Francisco bay. Rail transportation was also greatly improved.

The number of wells producing at the close of 1907 was 193; at the end of 1908 there were 236. There are twenty-three strings busy in the northern division—Santa Maria, Monterey and San Luis Obispo—fourteen in the south—Fullerton, Sherman and Chino ranch—and three in Kern and Coalinga. One string is running on the Chino ranch in San Bernardino county.

The outstanding stock is $23,982,200. The gross earnings were $9,197,250.75; expenses, $6,174,317.90; leaving net earnings for twelve months $3,022,932.85; average monthly earnings, $451,911.07.

There is no direct bonded indebtedness, but the company guarantees the bonds of the following subsidiary companies: Mission Transportation and Refining company: bonds issued, 1000; redeemed, 150; held by the Union, 10; outstanding, 840. Union Transportation company: issued, 3000; owned by the Union, 161; outstanding, 2839. Union Steamship company: issued 1000; redeemed, 250; outstanding, 750. The company's quick assets on December 31—cash on hand, stocks of oil, bills receivable, etc.—were sufficient to pay $1.45 on every $1 of floating debt.

WILL SHIP TO JAPAN

Word comes from Los Angeles that Redondo is to be made a port of call for a fleet of Japanese steamers which will carry crude oil to Japan.

From the nearby Sherman field a pipe line is under construction and three miles have already been completed. The Associated Oil Company, which operates largely in the Sherman field, has concluded arrangements with the Mitsui Company, a Japanese firm, operating steamers under the British flag. These steamers will follow a regular schedule to Redondo.

Pioneer Transportation in the Oil Fields. This District is Now Traversed by Railway and Pipe Line

This Japanese company, through its general manager, T. Takahashi, asserts that it wants all the crude oil it can get in California and will put on the necessary boats to handle the business. The wharfage facilities at Redondo will be enlarged to take care of the increase in shipping and the three piers extended 200 to 300 feet to accommodate the large vessels.

THE USE OF ASPHALTUM

By Harry Larkin.*

Asphalt has been at the service of mankind from the earliest history—in fact, before the date of authentic record. We find evidence of its use for cementing the bricks in the temples of the Sun-god and the Moon-god and in other structures that in ages long ago stood where Babylon, with its architectural grandeur, housed the rulers of a world, recorded in the most ancient of histories.

Nothing will kill the binding properties of asphaltum so quickly as overheating. In laying a felt and gravel roof, the topcoating will be shortlived, the gravel will not be properly imbedded and the roof will soon need recoating. In paving, if either the asphaltum or grit be overheated, the pavement will have no consistency and it will soon crack. In waterproofing work the surface will be black. On a roof, the greatest care and judgment must be used in laying felt to see that it is properly stretched, laid smoothly and that no wrinkles appear.

On the Pacific Coast at present all of the asphaltum in use is derived from the refining of natural mineral oils, the deposits of natural rock asphalt having been exhausted. The process followed in its production is to place the natural oil in a still and take from it the volatile parts, such as benzine, distillate, lubricating oils, etc., the heavier carbons remaining, constituting the commercial asphaltum of today. The nature of the asphaltum obtained depends upon the density of the original oil, the care taken in not overheating the still and the length of time required in treating the oil. The hardness of the asphaltum depends upon the length of time it remains in the still—the longer it is treated the harder it gets. I consider that the only proper test of asphaltum is in the kettle, as an asphaltum taken from a high gravity oil may be treated in the still so as to come up to a specified number of points penetration, according to the tests of our board of public works, and still be unfit for use either for making mastic, grouting basalt blocks or any purpose other than making paint or coating building papers.

Great improvement has been made in the production of asphaltum in this manner during the past 10 years. In fact, today there are oil asphaltums on the market that very nearly approach the fine cementing qualities of the old rock asphalt. These are derived from low-gravity oils by refinery, where care is taken to produce a superior article. All asphaltums are black, but they are not all good.

Asphaltum is a cement in a waxy form. It is nothing else. Its natural tendency is to contract, so that due allowance must be made where it is used either for roofing, paving, insulation or waterproofing. In roofing or waterproofing the object of using saturated felt is merely as a medium to hold the asphaltum together, to allow for expansions, contractions and settlings. In paving the asphaltum is simply a binder for the grit that takes the wear. The tendency to shrink will show itself in a pavement unless it is rolled out and worked by constant use. Like Portland cement, asphaltum in its pure state is of little use; it must be used in conjunction with felt, grit or gravel to fill requirements.

Asphaltum has been used in various characters of paving with varied success. The bituminous rock which has been so generally used in California is a natural mixture of sand and asphaltum found in large deposits along the coast. For sidewalks or streets having moderate wear it makes a very satisfactory and cheap surface covering. Wherein it is weak is in the loam and vegetable matter in the mixture, and in the sand itself not being sharp; besides, the method of disintegration with steam leaves the finished pavement porous so that when the cold and damp weather comes on it cuts out into ruts. The character of "poultice pavement" more recently used in San Francisco has been a mechanical mixture of crushed rock for a binder, with a similar mixture of asphaltum and sand for the wearing surface. Provided the sand be clean and sharp, these pavements will give far better service than bituminous rock.

*Abstract of paper read before the Technical Society of the Pacific Coast

THE ADVANCE OF LIQUID FUEL

There are few such thorough converts to the advantages of liquid fuel as are the individual circles throughout California. For the past five years liquid fuel has been applied to almost every branch of industry, and now many of the passenger vessels calling along the Californian coast have discarded coal in favor of oil fuel—a lesson, by-the-bye, to our own large steamship lines. The Oriental Steamship Co. owns the two largest oil fired passenger vessels in the world and so pleased have the managers been with the conduct of affairs that a third large steamer for the Californian-China trade is being built to run on liquid fuel. In England, where matters always move slowly, we may yet hope to see the time when our ocean greyhounds may entirely dispense with their miniature grimy army of stokers, and go over to liquid fuel, for even counting freights from the countries of origin, liquid fuel would still hold more than its own against coal. It is satisfactory to find that in our own country liquid fuel has come to stay, and the impetus given to the budding trade by the Admiralty is bound to become the greater as time goes on.

The Standard Boiler & Plate Iron Co. of Niles, Ohio, has secured the contract for furnishing additional equipment for the Okmulgee Refining Co., Okmulgee, Okla., the same consisting of one 12 ft. × 32 ft. still; 8 ft. × 12 ft. × 40 ft. condenser; one 250-barrel agitator.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

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NEW MANAGEMENT, UNSAVORY POLICIES.

In a two-inch space, appropriately bordered in deep mourning, the California Oil World announces that a Mr. R. A. Hayden has purchased one-half interest in the said publication, and has assumed the management thereof. In the same issue the announcement is made, under a six-column scare head, that the production of the State has passed the consumption, and that the producers should get into a sober, conservative attitude in the matter of prices for oil.

Now, Mr. Oil Man, do you not consider this one of the rawest, most ridiculous and unsavory statements that could be made just about the time you are ready to make a contract for your next year's production? Do you not know that there is an actual shortage of oil in this State to-day? Do you not believe that the statement was made for the sole and express purpose of bulldozing you into signing a contract favorable to the marketing companies and ruinous to you?

Take for instance the production of fields as stated by the above named publication, viz.:

Kern River	43,000 per day.
Coalinga	35,000 per day.
Santa Maria	25,000 per day.
McKittrick	12,000 per day.
Los Angeles	11,500 per day.
Sunset	3,500 per day.
Midway	2,000 per day.
Other Fields	10,000 per day.

Can you not see the raw-handed scheme in placing the production of Kern River nearly ten thousand barrels daily, or more than three million five hundred thousand barrels a year greater than it actually is? The next great contract for oil will be made for Kern River product. The field is actually producing about 32,000 barrels daily, possibly less, certainly not more. The ten thousand barrels of padded production would make a good club to hoodwink the producers into signing a low priced contract. With a million-dollar refinery shut down and rusting away for nearly two years for the lack of sufficient oil to operate it; with the Japanese looking for a large quantity of oil and unable to obtain it, it does not look very much like "overproduction." We have had this misnomer thrown in our faces for the past four years. We believe that any man who will again dig up the old sore, particularly under the present conditions, has been liberally paid for his hellish work by the Combine or Monopoly most to be benefited. The sudden change in the policy of a once respected publication and the purchase of a one-half interest in the same by a man unknown in the newspaper world plainly shows the affiliation.

The World states that the Standard stored 1,700,000 barrels of oil in 1908 and the Associated 1,300,000 barrels, or a total of 3,000,000 barrels. No doubt this quantity of oil was put into tankage, but it is an actual fact that more than double the quantity was taken out and shipped from the district, and to-day the total storage of the field is less than one-quarter of what it was three years ago.

Another thing we want to say, that is that we believe that the signing of the next contract should not be left to any one man. It is too great a responsibility. It is likely to incur severe and undeserved criticism in case a low priced contract is signed. Mr. St. Clair is an upright, straightforward man, but the matter of signing a contract should be left to an executive board of not less than five of the principal producers of the Kern River field. We all remember the uncalled-for criticism of Mr. McQuigg, which should have been avoided by adopting the method above suggested. Mr. McQuigg undoubtedly got the best price possible at the time, but there was more than one who was willing to state that he believed he didn't. Such criticisms should be avoided. The fact that Mr. St. Clair is a heavy stockholder of the Associated Oil Company is sufficient reason to substantiate this opinion.

JOHN HAY, LONDON "CAPITALIST," SHOWS HAND.

Sequel to an Evidently Unsuccessful Deal Predicted at an Early Date.

John Hay, of London, England, promoter of numerous unsuccessful oil corporations in California, has attached the funds of one of his proteges, the California Petroleum Refineries, Limited, deposited in one of the local banks. It seems that Mr. Hay has been somewhat dissatisfied with the California Board of Directors for a long period of time, and we believe that the said California Board has had sufficient reasons for a greater dissatisfaction for a still greater period.

Oil men of the State will recall the refinery project of the California Petroleum Refineries, Limited, and the statements made at the time that the corporation would beat the Standard Oil Company, or any other monopoly or combine to a "frazzle." The refinery was constructed at Oilport, near Port Harford, and is considered one of the best in the country. It was not, however, constructed in a manner best suited for the refining of California oils. Dr. Gurgenianz, who had full charge of the building of the plant, followed European plans, never having had experience in the refining of American oils. It would probably take at least three months to put the plant in practicable working order.

Another error was the location of the plant which was erected on a very sightly spot but not a practicable one. However, this was not a serious mistake except as to the site of the 1,600-foot wharf. About 1,000 feet of the wharf was washed away during the first hard storm. Furthermore, we understand that the bay was not properly sounded at this point and that the S. S. Catania struck a rock near the end of the wharf on two occasions, sustaining some damage.

It does not seem that the California Board was in any manner responsible for this unfortunate condition of affairs as Dr. Gurgenianz, who we understand was engaged by John Hay, was in full charge of construction. Had American or English engineers been engaged the work would have been properly completed. As we understand the matter the California Board was powerless to act without the approval of the London Board.

Unfortunately, just as the refinery was about completed, the wells of the Graciosa Oil Company, an affiliation of the California Petroleum Refineries, Limited, went to water, practically shutting off the supply of oil that had been contracted to the refinery people. While the combination of companies owned a pipe line to the Santa Maria field, where the wells of the Graciosa were located, it could not purchase, or was not in a position to do so, the necessary amount of oil for the operation of the refinery; therefore a million-dollar plant has been idle for a period of nearly two years, or, in other words, has run scarcely a still of oil.

The profits of refining are enormous, amounting to more than a million dollars a year on a plant with a capacity of ten thousand barrels a day. It is not unreasonable to suppose then that the stockholders, some of the largest being members of the California Board of Directors, are getting uneasy, and we sincerely trust that they will be enabled to put the proposition into working order and rid themselves of any obnoxious affiliation now existing.

LEGISLATURE SHOULD PASS ODOM OIL BILL.

There seems to be a general tendency to criticise the oil bill introduced in the legislature by Assemblyman W. R. Odom. The peculiar feature of this criticism is that there is no specific objection to the bill. No one has as yet voiced any possible reason why the bill should not pass. Yet the Coalinga Record says, "Mr. Odom is not a practical oil man." It also says, "the purpose of the bill is all right and proper but we are of the opinion that it will not stand the test of practical enforcement, if indeed it can be enforced at all."

Now there you are. Of course if a law cannot be enforced there is little use of encumbering our statutes with useless regulations. Just why the law could not be enforced, if enacted, is not stated. If the Record had said that the big operators did not want any laws at all the objections to the bill would have been stated in terms that the small operator could understand, in fact anybody could understand the reason why, the bill is criticised.

Practically the same regulations as are proposed in this bill are in effect in other oil fields and everybody is reasonably well satisfied with the results. Just why California should be immune from the enforcement of just laws for the protection of its greatest industry we cannot understand.

It is stated by some that each oil district has its peculiarities and that a single law could not be applied to all. One might as well say that every individual has his peculiarities and that a particular law should be made to apply to him alone.

As a matter of fact, the Odom Bill is not an objectionable one. Mr. Odom was assisted in the preparation of this bill by practical oil men and it isn't necessary that Mr. Odom be a practical oil man to enable him to hand the bill over to the clerk or to announce its introduction into the legislature, any more than it is necessary for a housewife to know all about the oil industry to be able to light a kerosene lamp with a sulphur match.

The Odom Bill ought to pass, and if any one has any objections to it, let him say what they are. Mr. Odom has asked for criticism. The bill should be discussed and improved, if possible, but inane criticism should not be considered. We believe there is room for improvement in one feature of the bill, and that is where the log of a well must be filed within ten days from the cessation of drilling operations. In fairness to all concerned we believe thirty or sixty days would not be too long a time to be allowed.

HON. W. R. ODOM
Author of the Odom Oil Bill and a Strong Supporter of the State's Greatest Industry

The full text of the bill appears below:

AN ACT

TO PREVENT INJURY TO OIL, GAS OR PETROLEUM BEARING STRATA OR FORMATIONS, BY THE PENETRATION OR INFILTRATION OF WATER THEREIN.

The people of the State of California, represented in Senate and Assembly, do enact as follows:—

Section 1. It shall be the duty of the owner of any well that may be drilled in the State of California on lands producing or containing oil, gas or petroleum to properly case such well with metal casing in accordance with the most approved methods, and to land the casing in the clay or other water impervious strata or formation immediately underlying the surface water-bearing sands or strata, and if the well be drilled to a sufficient depth, to land the casing in the clay or other water impervious strata or formation underlying the oil bearing strata and to effectually shut off all water overlying or underlying the oil bearing strata and to effectually prevent any water from penetrating such oil bearing strata.

Section 2. It shall be the duty of the owner of any well referred to in Section One of this Act, before abandoning the same,to withdraw the casing therefrom and to securely fill such well with clay, earth or cement mortar or other good and sufficient materials, used alone or in suitable combination and thoroughly pack and tamp the same into such well to a point one hundred feet above the upper oil bearing strata and while withdrawing the casing therefrom to effectually and permanently shut off and exclude all water underlying and overlying such oil bearing strata.

Section 3. It shall be the duty of the owner of any well referred to in Section One of this Act to keep a careful and accurate log of the drilling of such well, such log to show the character and depth of the formations passed through or encountered in the drilling of such well, and particularly to show the location and depth of the character of the water encountered from time to time, and to show at what point such water was shut off, if at all, and if not to so state in such log, and to show the depth at which oil bearing strata is encountered, the depth and character of the same, and whether all water overlying and underlying such oil bearing strata was successfully and permanently shut off so as to prevent the percolation or penetration into such oil bearing strata; and within ten days after drilling operations have ceased on any well the owner shall file or cause to be filed with the County Recorder of the County in which such well is located a full and complete copy of such log, duly verified.

Section 4. The term "owner" as herein used shall mean and include each and every person, persons, partnership, co-partnership, association or corporation owning, leasing, managing operating, drilling or possessing any well mentioned in Sections One and Two of this Act, either as principal or principals, lessee or lessees of such principal or principals, and their and each of their employees. The term "oil bearing strata" as herein used shall mean and include any bed, seam or stratum of rock or sand or other material which contains, includes or yields earth oil, rock oil or petroleum oil or natural gas, or either of them.

Section 5. Any violation of the provisions of this act shall be a misdemeanor and shall be punishable by a fine of not less than twenty-five nor more than five hundred dollars, and each and every day that such violation shall continue shall constitute and be a separate offense.

Section 6. A violation of any of the provisions of Section One or Two of this Act is hereby declared to be a public nuisance.

Section 7. Upon the filing of a complaint alleging the violation or any of the provisions of Sections One and Two of this Act, it shall be the duty of the District Attorney of the County if so requested by the complainants to make or cause to be made a thorough investigation of the well in question to determine whether or not any of the provisions of this Act have been violated, and for such purpose he is hereby empowered to appoint all necessary agents and assistants to conduct such examination and such agents or assistants may enter upon the premises where such well is situated and may take charge of such well for the purpose of making such investigation. If the defendant in the action shall be convicted of a violation of any of the provisions of Sections One and Two of this Act, he shall, in addition to the penalties hereinbefore set forth, pay all reasonable and proper cost incident to the making of such investigation. Should such action be dismissed or an acquittal be had, then such costs shall be a charge against the complaining witness.

Section 7. If any owner shall be convicted of a violation of any of the provisions of Sections One or Two of this Act, it shall be the duty of the Sheriff of the County in which such well is situated to enter upon the premises, take possession of such well and to abate said nuisance and to take all necessary steps to prevent the percolation or penetration of water into the oil-bearing strata. He shall keep an accurate account of the expense of such work and all expense so incurred shall be a charge against the owner of such well and a lien upon the same.

Section 8. An "Act to prevent injury to oil or petroleum bearing strata or formations by infiltration or intrusion of water therein," approved March 24, 1903, is hereby repealed.

LIABILITY OF STOCKHOLDERS.

At Iola, Kan., Judge O. Foust recently handed down an interesting decision in the case of the First National Bank of Chanute against the stockholders of the West Plant Oil company, of which a dispatch from that place says: "His opinion is a ruling that a shareholder in a company is liable for the difference between what the stock which he holds cost him and the face or par value of the same. Under this ruling the judge gave judgment against the West Plant Co., stockholders for close to $800,000. The company was capitalized at $1,000,000, there being one million shares at $1 each. Two and one-half cents was paid into the treasury of the company on a share issued. Judge Foust's ruling is that the shareholders are liable for the other 97½ cents due on each share they possess, if it is necessary that so much should be paid to satisfy the debts of the company. As the indebtedness is not that much, however, he directs the receiver, S. C. Brown, to collect one and three-fourths per cent of the amount due from each stockholder and apply the levy to discharge the indebtedness of the company and to closing up its affairs. The West Plant Oil company was incorporated under the laws of the territory of Arizona. It was formed by members of the Kansas Vitrified Brick Co., for the purpose of drilling and operating oil wells on its lease holdings west of Chanute These consisted of 170 acres.

Reported by

Special Field Representatives

of the

California Derrick

COALINGA.

The Odom bill now before the Assembly is attracting much attention from the oil men of the State. That something should be done to more fully control the water problem in every field is an acknowledged fact, but all agree that it is a very serious proposition, and must be acted upon with the greatest care. Every field has its individual formation, while in part similar with all formation in California, yet each field differs in the water stratum. The opinion of the large operators in this field is that this matter needs time to consider all the requirements, that no setback be placed upon the industry.

The question is frequently asked: "What is the value of mineral oil land?" This depends largely upon the many conditions that surround the property in question. What are the side protections? Are other companies crowding your lines? The sand at the bottom of the oil bearing stratum of course will percolate much more freely than through the flour sand sometimes found. The dip and character of the sand will be a factor that will enter into your calculation. The matter of transportation is not a very serious figure, you get the oil and rest assured, under almost any condition that may prevail, some transportation company will reach you by the time you have oil for the market. First, get the oil. Second: Transportation will find you. The value of oil lands may be measured by the first three wells, seldom by the first well. The depth of the sand from which you draw the oil will enter into the question. The depth to reach the oil stratum, and the character of the formation that the bit must encounter should be considered.

The Union Tool company has purchased a lot 50x150 feet, of Charles Henslick, upon which it will erect a machine shop. President Double spent a day last week looking over the situation here and is well satisfied with conditions. The Union Tool company will establish shops at Midway and Maricopa, Kern County. This will give Coalinga three machine shops, with first-class mechanics, it will add permanency to the town and shows the confidence in the field of the men who are familiar with the situation in California.

The excessive rain of this year has nearly put the Southern Pacific on this branch out of commission. That this is the heaviest storm since 1899 is the opinion of some of the earliest settlers. The Southern Pacific has taken off the heavy oil trains until the weather becomes settled. The company will lay heavy steel rails from Armonia to Coalinga as soon as the weather permits. A large quantity of material is now at Armonia for that purpose.

The cold weather has made the oil run very slow through the pipe line to Monterey. It was taxing the Associated to move oil as fast as required when the line was carrying its full quota, and the company was running from 24 to 36 cars out per day. As it is now, several companies which have the heavier grade of oil, are building earthen reservoirs to store the oil until transportation facilities improve.

The Guthrey Oil company, section 31-19-15, well No. 2, began flowing last Sunday, making at the rate of about 600 barrels per day. The well has been very erratic lately. The superintendent hopes to get her in full control, as she is quieting down, making about 125 barrels per day.

The present indications on the Claremont Oil company, section 4-20-15, and the Coalinga Mohawk Oil company, section 12-20-15, substantiate the claim of Ralph Arnold, of the U. S. Geological Survey, that the break, or dyke, running through section 19-19-15, reaching as far south as section 13-20-15, is only a surface or local disturbance. While the wells, it is claimed, along the dyke, will be deeper it does not cut off the oil stratum. Much timidity has been shown by operators in approaching this dyke, so called, but the work now being done on section 4-20-15, and on section 12-20-15, will have some influence on reasuring land owners along this disturbance.

Coalinga will have a new post office building. A. E. Webb has completed arrangements with the Department at Washington, and will immediately commence the erection of a one-story brick on his property on Fifth street, next north of the new building of the First National Bank of Coalinga. The building will be in Roman brick, buff in color, 25x85 feet deep. The interior finish will be in old oak, with the latest design in lock boxes and office furniture. There will be 600 combination lock boxes.

The El Cerrito Oil company, section 14-23-17, is shut down on account of bad roads; the storm has soaked the clay sags in the Kittleman Plains so that heavy teaming is out of the question. J. L. D. Walp, driller on the well and a large stockholder in the company, reports the casing in the well in perfect condition, and as soon as the roads will permit they will haul out a heavy drilling line, to replace the worn out one now on the bull-wheel.

H. H. Riley optioned and sold the west half of the southwest quarter of section 36-19-15, to Return Roberts, of Modesto, and W. B. Thurman, Albert Frohm, Wm. Keck, J. W. Ragsdale, et al., for $56,000.00 cash. This property adjoins the W. K. Oil company, on section 2-20-15, and is looked upon as proved territory. Return Roberts is a thorough business man, formerly of San Jose, who has entered the "oil game" as an investment, and who is a factor in any organization that attracts his attention.

The California-Coalinga Oil company, promoted by Gen. W. H. H. Hart and Paul Ferguson, of San Francisco, has leased of James Fearon the southeast quarter of section 18-20-15, and the southeast quarter and the south half of the north half of section 8-20-15. The company contemplate immediate operation. The first well will be located near the west line of section 8-20-15, just north of the M. K. & T. Oil company. This territory is about 3,000 feet deep and considered good.

The Golden Crest Oil company, section 12-22-15, has well No. 1 about 1,500 feet deep with 10-inch casing; water will be shut off this week. The well will be completed with 8-inch casing. A very encouraging sand has been penetrated, which shows up well for a first sand.

The First National Bank of Coalinga bought a lot of A. E. Webb on Fifth street, upon which it will erect a two-story Roman brick, mission style of architecture, buff in color. The building will be 25x85 feet deep.

The Coalirga Red Top Oil company, section 6-21-15, will commence operations at an early date upon the west half of the southwest quarter of the northwest quarter. This is a new company entering this field under favorable circumstances.

A. G. Wishon, of Fresno, Cal., was in town last week, looking over conditions. It is reported that Mr. Wishon is interested in electric power and domestic water plants. The presumption is that the gentleman was here in these interests.

The Cantua Oil company, section 34-17-14, is 1,660 feet deep. The formation has thickened up as the bit has penetrated the various strata. Mr. McCrary now believes they will get the pay sand they are drilling for at about 1,800 feet.

The Porter & Scribner, section 7-20-15, has shut off the water in well No. 4, drilling that far with the rotary rig. Karl Baker will now finish with standard tools. Well No. 5 is being rigged up for the rotary rig will drill to the water line and finish with Standard tools.

The Empire Oil company, the south half of the northeast quarter of section 32-19-15, has material ready to erect a standard rig, as soon as the weather conditions will permit; active development work will be commenced as soon as rig is built.

The Fresno-San Francisco Oil company, section 1-20-14, has shut off the water at 116 feet with one string of casing. John Livermore, contractor, says that he will finish the well with one more string of casing.

The Commercial Petroleum company, section 31-19-15, has finished well No. 12, now making about 100 barrels per day, or better. Well No. 10 is doing about 125 barrels per day.

The Valley Oil company, on the northwest quarter of the southwest quarter, section 32-20-15, recently organized; as soon as the weather will permit, will haul material for a rig.

There were 429 oil cars out from Ora station during the month of January; about 1,150 cars were hauled from the Associated Oil company's big tank on section 8-21-15, same month. The Azores Oil company, section 26-21-15, has the material to rig up on well No. 1 as soon as the weather will clear up so that teaming can be done.

The Inca Oil company, section 24-20-14, is building a 5,000 barrel steel tank in the center of the property. The power plant and pumping station will be in the center of this property.

The Penn-Coalinga Petroleum company, section 1-20-14, finished well No. 5 last week in 17 gravity oil; the well is showing up very nicely.

The Amy Oil company, section 6-21-15, have landed the 12½-inch casing at 1,000 feet; the 10-inch casing is now in at 1,100 feet deep.

The Ward Oil company, section 12-20-14, has spudded in well No. 6. The development work is going ahead on this property in good shape.

The Lucile Oil company, section 6-21-15, has well No. 3 1,250 feet deep, with 12½-inch casing; wells No. 1 and No. 2 are steady producers.

The Section Seven Oil company, section 7-20-15, spudded in well No. 6 last week.

The Coalinga-Petroleum Oil company, section 14-20-14, has finished well No. 6; are rigging up on No. 7.

The Du Luxe Oil company, section 6-21-15, has well No. 1 about 650 feet deep with 12½-inch casing.

Wm. Graham, section 6-21-15, has well No. 1 producing, doing about 300 barrels per day.

The Empire is the name of the new oil company that is being formed to operate the south half of the northeast quarter of section 32-19-15. Arrangements are about completed for the beginning of the work.

A meeting of the stockholders of the Coalinga Red Top Oil Company was held in Hanford, February 11, at which the following officers and directors were elected:

Dr. C. T. Rosson, President; Thos. S. Esrey, Vice-President; J. L. C. Irwin, Secretary; National Bank of Hanford Treasurer; Freeman Richardson and J. S. Brincefield, Directors. J. M. Robertson, president of the Lucile Oil company, was elected general manager to have charge of the field operations.

W. Sutton, of London, England, has come to Coalinga in the interest of the British Consolidated Company. Mr. Sutton is a practical oil man having had considerable experience in American oil fields, notably Beaumont, Texas, the Lompoc field in this state, and others.

The Central Union company had to abandon its well No. 1 for lack of funds, and it is to be hoped that if the new company secures possession, a thorough test of this part of the field will be made.

Brookshire No. 9, which has not been producing well for some time, is being deepened. This well is only about 150 yards from Hartnell No. 1 and Brookshire No. 5, two of the largest producers in the field.

LOS ANGELES.

The strike made by the Amalgamated Oil Co., in its No. 23 on the Wolfskill Ranch, about five miles west of Sherman Junction, seems to be of more importance than appeared when it was first reported. The well, instead of sanding up and dropping off in its output, has actually increased its flow, and bids fair to develop into a gusher, such as the field was once noted for. At last reports the well was doing 1,200 barrels per day, of 19 gravity oil. The company's No. 1 on this tract, which was drilled in several months ago, while demonstrating the presence of oil, was a failure on account of being flooded with water. The well just completed has proven the richness of the territory, and has caused quite a stir. The well was drilled 2,000 feet with a rotary, and finished at 3,100 feet with a standard rig, the water being successfully shut off at about 2,700 feet. The company has seven strings of tools running in this vicinity and the Union has two on its 720 acre piece recently acquired from Gable and McDonald. With this exception all the land in this neighborhood is under lease by the Amalgamated and Associated concerns.

Busy Portion of the McKittrick Oil Field

SANTA MARIA.

Production for the month of January of this field showed little change. No new wells have been put on the pump, with the exception of New Pennsylvania No. 5, which so far has not shown a very large output. A substantial increase in the production may be looked for in February and March, however, as the Union, Pinal, Brookshire and Stendell all have wells about completed. Of these the Union has two on the Bell ranch, in the Cat Canyon district, of which much is expected, as the company has extended its eight-inch pipe line to them and erected two 35,000-barrel tanks. This company has also laid a six-inch gas line from its wells on the Hartnell and Squires leases to Orcutt, to enable it to fire the large pumping plant with gas.

The rains of the past month have caused a great deal of damage and inconvenience in the oil fields. The Pacific Coast railroad bridge over the Santa Maria river was washed away, so no oil well supplies other than the stock at Orcutt are available, and consequently many drilling wells are shut down until the bridge can be replaced. The Standard and the Associated Oil companies each had a bad break in their pipe lines to the coast, the Standard's being broken in the Santa Maria river, and so cannot be fixed until the water recedes, while about 1,500 feet of the Associated's was washed away at San Lucas Pass, but has been replaced. The Union's line to the coast, which crosses the river on the bridge, is now suspended over the water so no oil can be pumped through it with safety. These companies all have adequate tankage to take care of their production for some time, however, so little loss will ensue.

A rumor is afloat that a Jennings, Louisiana, company is about to buy up the property of the Central Union Oil Co., adjoining the Union and Brookshire on the north, comprising 160 acres.

A. F. Gilmore's No. 11, being drilled as a test on the western line of his property about one-half mile east of Sherman Junction, is down 1,900 feet and in the sand. The well has not yet been perforated and work will probably be suspended on it until No. 10, on the eastern line, is completed. This well was commenced over two years ago, but a stratum of gravel and cobble stones at about 1,200 feet "hung up" the drillers and eventually the hole was abandoned and the rig moved. In the second hole they got through the difficult formation and are now 1,800 feet down. They expect to strike the sand at about 2,100 feet.

The test well of the Pacific Light and Power Co., located about one mile north of present developments and directly east of Hollywood, is not making very good progress. The formation is not favorable for a rotary rig, and after four months' trial it is being taken out and a standard rig installed. The hole is only 600 feet deep.

Last month there were 82,000 barrels of crude oil shipped from Redondo, by the Associated Oil Co. The 66,000 barrel storage tank is about completed and other work is in progress on wharves, etc., which indicates that the company intends making Redondo its principal shipping point in the south, and Gaviota will probably be abandoned. All this oil comes from the company's wells in the Salt Lake field, and helps to dispose of the surplus, which at present amounts to about 125,000 barrels per month. The pipe line which is being built from the field to Redondo is not yet completed, but rights-of-way have all been secured and the line will be laid as soon as possible. The distance is about 20 miles.

In addition to shipments from Redondo, the Union Oil Co. is shipping from San Pedro about 50,000 barrels each month.

This comes from both the Salt Lake and Fullerton fields, which are connected with this port by pipe line. The crude shipped by the Associated goes to Japan and northern coast points in Oregon and Washington. The Union's oil goes to South American points and also to northern coast points.

It is not likely that the organization of oil men identified with the southern fields, will ever materialize. No meeting has been held for two months and the movement seems to be dying a natural death. The men originally promoting the scheme seem to have lost interest, and there is no head to it at present. In the meantime each producer is selling his oil in the local market for what he can get, which is from 65 to 80 cents, delivered.

The number of wells producing in the Los Angeles city and Salt Lake fields is 618, 426 of these being in the old city field, and 192 in the Salt Lake. In the city field there have been over 1,300 wells drilled during its existence, which is about twelve years, but they have one by one failed and been abandoned, until now there only remain 426. The production from these amounts to about 40,000 barrels per month—an average of but little more than three barrels a day per well. The Salt Lake field, with its 192 completed wells, produces about 350,000 barrels per month, an average of about 63 barrels per day to the well. The total monthly output of the entire district is about 400,000 barrels, and the local markets can take care of nearly 300,000 barrels. The output of the Salt Lake field is likely to increase, if the Wolfskill Ranch proves as good as it promises at present. The city field, of course, will continue to decline, and it is doubtful if there will be a well in the city limits in five years' time.

Wildcat operations in the southern part of the State are not developing much, and it is doubtful if any new fields or pools are opened up, as a result of prospecting. Operations around Newport have developed nothing, although frequent reports have come from there recently of a strike by the Balboa Oil Co. Several weeks ago this company's well was reported as having struck the oil sand at 2,900 feet with indications that the well would be a big producer. The hole is now over 3,000 feet deep, and is still unfinished, drilling being continued, because it was found that the "strike" was merely a seepage. The Newport Bay Oil Co. has drilled 3,600 feet in its No. 2 and no oil has yet been found. There may be a body of oil lying under ground in this vicinity, but it has not yet been located. J. M. Kellerman is drilling a well not far from the Balboa location.

The Kramer Consolidated Oil Co., which has been drilling on the desert near Kramer, in San Bernardino County for the past nine years, has also struck a snag at 2,900 feet, in the shape of granite, below which experts say no oil will ever be found, and it may safely be said that no oil field will be opened up in San Bernardino County, near Kramer. Another concern has, however, made a location in that vicinity with a "witch stick," and claim they will get oil. The outfit is the laughing stock of all who have heard of it.

The Union Oil Co. is still drilling on its well in the Salt Lake field, near Rosemary station. The hole is now nearly 4,700 feet deep—the deepest in the State—and no sand has yet been found, although the location is but a short distance from a well that came in as a gusher at 3,600 feet. The company's purpose now in drilling is probably simply to test the ground, as to pump a well so deep would be impracticable and likely impossible.

The test well of the N. D. H. Oil Co., about one mile due south of Rosemary, is about 800 feet, but has not encountered anything encouraging as yet. It is believed this location is outside the productive belt.

FULLERTON.

The Columbia Oil Co. lost its No. 17 last week by fire. The hole is 2,400 feet deep, and the tools had been in the sand for about 300 feet. An unexpected flow, which sent the oil over the derrick, set fire to the rig and burned up $4,000 worth of machinery and tools before it was extinguished. A sand pump was lost in the hole and the casing dropped ten feet. It is not known whether or not it will be necessary to abandon the well, as the new rig has just been completed and the work of cleaning out not yet commenced.

This company's Nos. 16 and 18 are in the sand and will be completed this month. They are both showing up for "big ones," and they will largely increase the company's output, which is now about 1,200 barrels per day. This is the result of two years' work. In November, 1906, the company's production was 100 barrels a day, obtained from 12 shallow wells. At that time the company's stock was selling for 22 cents and few buyers. Today $1.10 is offered on the exchange and $1.15 asked.

The production in the Fullerton field is increasing rapidly, and the present year it will produce close to 5,000,000 barrels. Although the territory is deep—from 2,500 to 3,500 feet—and drilling correspondingly slow, it is unusually rich and in the proven belt large wells invariably result, and they are long lived. One well of the Santa Fe has been producing five years and is still doing 300 barrels. The Columbia has one over two years old, which is producing 700 barrels daily. The Union has a number nearly two years old still doing 200 and 300 barrels. While the limits of the field are squarely defined to the east, it is being extended toward the west and is destined to be one of the big fields of the State.

The Fullerton Oil Co.'s No. 1, on its Brea Canyon tract, which came in as a 3,000 barrel gusher about two months ago, is holding up remarkably well. The daily flow is said to still be 1,500 barrels. The company is drilling on its No. 2, which is down 1,800 feet.

The Orange Oil Co.'s No. 2 is in the sand at 2,100 feet and showing up for as good a well as No. 1, which is eight months old and still good for 200 barrels a day.

W. B. Scott & Co. started spudding last week on their No. 1 and are down 300 feet. This well is located on their tract recently acquired, about a mile due west from the Orange property. A strike here will practically connect the old Puente field with the Fullerton district.

Busy Scene in One of the California Oil Fields

The Puente Oil Co., which has 70 shallow wells on its property, some of which are twenty years old, is drilling a test well on the eastern line of its property, trying to locate a second sand. The hole is about 2,500 feet deep now, but aside from gas nothing has been encountered indicating oil.

The Syndicate Oil company, drilling a test at the mouth of Brae Canyon, is 1,500 feet deep, with no sand in sight. It is believed this is sure territory, but rather deep—not less than 2,500 feet. It is on the south line of the Union Oil Co.'s property and just west of the Graham-Loftus tract on Stearns Ranch.

The Graham-Loftus well on the Stearns Ranch, about a mile south of developments, is down over 3,000 feet. It was expected the sand would be found at about that depth, but there are no indications yet. Drilling will be continued as far as possible, as the dip of the strata in the field is such that it ought to be reached at not a greater depth than 3,500 or 3,600 feet. The theory that the strata "flattened out" was not verified.

The Santa Fe has practically left the Fullerton field so far as new work is concerned. The immense amount of work it is doing in the Midway, demands all of its attention, and no new wells are contemplated at Fullerton. Three wells are being finished up, but no new rigs are up.

Most of the oil from this field is handled by the Union, and some of it goes to San Pedro for foreign shipment. The Union buys from the producer and no price is stipulated. The Union applies the oil on any one of several contracts which it holds, and the producer participates in that sale, whatever the price may be that the Union receives. A charge of ten cents is deducted by the Union for pipeage. This arrangement seems satisfactory to the producer and at present is netting him from 60 cents to 70 cents per barrel. All the oil is moved promptly and none is going into storage.

WHITTIER.

Nothing of importance has happened in this field during the month. The Central brought in one well in its light oil belt, which is good for about 50 barrels per day, and is drilling several others. In fact, the company is devoting most of its attention to this belt. It is located about one-half mile to the north of the original "strike," on which the first wells were drilled several years ago. The quality of the oil makes it desirable for refining purposes, and a good price is received for it. The company is running four strings.

The Murphy Oil Co. brought in a well recently on the Coyote Hills tract, which is reported as a good one. The company succeeded in getting the water shut off in this hole—a thing not done in the previous wells—and a good well is the result. After three years' work in this district this is the only company that has a production and it only has three wells. It is doubtful if a very large pool will be opened up here, as the territory seems limited.

The Whittier field has never been an attractive one to oil men generally. It is possible, however, that the field might be extended in a southeasterly direction if a test were made. Several years ago the Raymond and the New England Oil Companies both drilled wells about three miles southeast of developments. The New England got down 2,100 feet and "pinched out" in 4½ inch casing and could go no deeper. At this depth, however, a sand was encountered which showed considerable oil, although the water had not been shut off. After a long fishing job the well was abandoned and dissatisfaction among the stockholders prevented them drilling another one.

There are experienced oil men who believe the Whittier sand extends in this direction across the La Habra valley and is the same as is found in the Coyote Hills.

KERN RIVER

At the annual meeting of the Apollo Oil company, held in San Francisco the first of the month, Livingston Jenks, Charles K. Harley, Charles H. Wood, John E. Lutz and W. E. Miles were elected directors.

On the Mercedes property now owned by the Amaurot Oil company of San Francisco well No. 3 has been cleaned out to a depth of 740 feet. There are four wells doing about 4,200 barrels per month. There is very little trouble with water and practically none is expected in the new work being planned. The property was taken over about four months ago.

The Santa Fe is installing an air-compressor plant with three 100-horsepower boilers that is expected to take care of ten wells.

A deal of considerable importance took place this month in the purchase of the twenty acres of the Arizona Western on the east line of the West ½ of the N.W. ¼ of 8-29-28 by W. E. Knowles of the West Shore company. There is one well on the property, drilled a number of years ago, which is said to have produced at the rate of sixty barrels per day for a time.

SUNSET—MIDWAY—McKITTRICK.

The Monte Cristo recently brought in a well on the north west corner of section one, Midway, which is reported to be flowing as high as 1,000 barrels per day at times. It is expected to settle down to a steady producer of three to four hundred barrels. The oil is slightly above 17 gravity.

Section 25 Oil company, at Midway, is drilling a fifth well on its property, the four wells now on the pump doing about 1,000 barrels a day. No. 2 has been re-perforated and has been increased from 200 to 250 barrels. The new well just completed is said to be producing about 200 barrels.

At a depth of 1300 feet the Wrampelmeyer well on section 30, Midway, is reported to have struck fifteen feet of oil sand, which is sufficient to prove the territory to be oil bearing.

The Scott people have decided to drill a second well on the Midway property, the first well having settled down to 100 barrels production with prospects of an increase. Considerable difficulty has been had with water but this is now believed to have been obviated.

The well of the Santa Fe on section eight, Midway, is reported to be doing at the rate of about 400 barrels per day on tests. The well is down 1,200 feet. The same sand was encountered at the same depth in a well drilled several years ago to a depth of 2,100 feet.

All of section 28-30-22 except that owned by the Associated Oil company at McKittrick, has been sold to George Corey who expects to start drilling operations as soon as water is developed from Steamboat Springs. This ground lies to the east of the Providence and was operated a number of years ago by the Standard people.

The sale of the Livestock Oil Co., formerly the California Fortune of Sunset, to C. C. Tannehiel and others of Rosewell, New Mexico, has been consummated. It is stated on good authority that $50,000 changed hands. J. H. King negotiated the deal. Mr. Tannehiel and his brother, representing the buyers, who comprise a number of Tannehiel's New Mexico friends, have taken over the property. They have not yet named their superintendent. It is said that Ben K. Stroud, who recently terminated his connection as superintendent of the Fairbanks Oil Company in Midway, has been offered the position.

The Standard's last success on the Jameson lease on 24, Midway, has determined the octopus upon sinking thirty more wells on that eighty acres, and the first rigs will get busy at once The last well is said to be good for 500 barrels a day. The depth is supposed to be from 1200 to 1300.

The La Blanc well at Sunset is down something over 1,200 feet and gas has been coming in quite strongly. The hole is passing through a sandly shale, which is considered a certain indication of the near presence of oil sands. It is only a question of a few days, according to Superintendent Howe, before the oil will be struck.

The Muscatine, which struck first sands about a month ago, is coming along in fine shape, according to latest reports.

The Templor Ranch, with the new well brought in a month ago, is said to have a demonstrated daily production of approximately 300 barrels, which should be largely increased by the wells now being drilled.

The Templor McKittrick is making regular shipments of oil from Asphalto, where it has its own loading racks. The property was recently visited and reported upon by A. G. Nichols, of Los Angeles.

The Lady Washington, according to latest reports, is down over 800 feet in well No. 1 and 1,400 feet in well No. 2, at Sunset. It is expected that it will require 300 feet more of drilling before oil sand is encountered in well No. 2.

The Seaboard Oil and Transit Company, a $5,000,000 California corporation organized by Los Angeles capitalists, is about to acquire control of several producing companies in the various oil fields of the State.

Exports of Mineral Oil for November, 1908

CUSTOMS DISTRICTS	MINERAL OIL CRUDE		MINERAL, REFINED OR MANUFACTURED							
			Naphthas, Etc.		Illuminating		Lubricating		Residuum	
Domestic Exports										
Alaska			340	108	1,075	267				
Puget Sound	472,715	9,770	21,129	1,371	1,460	272	5,231	549	1,250	94
San Diego					1,105	202	101	49	1,950	187
San Francisco	3,613,100	71,633	1,460	207	3,801,315	173,059	33,161	9,711	5,845	397
Total	4,085,815	81,403	22,929	1,686	3,804,955	173,800	38,493	10,309	9,045	678
Shipments to Alaska										
From Puget Sound			77,607	11,719	44,073	10,315	5,452	2,029		
San Francisco					40	8				
Shipments to Hawaii										
From Los Angeles	1,407,000	26,800	26,400	2,376						
San Francisco	1,050,000	16,800	39,809	5,843	28,100	4,860	19,944	8,603		
Shipm'ts from East'n Ports										
Baltimore			5,500	1,668	624,867	37,544	316,800	53,640	925,118	37,004
Boston and Charlestown			440	85	6,350	758	30,142	5,275	61,300	3,295
New York	946,062	61,900	553,061	86,711	62,318,885	4,174,967	7,880,976	1,088,027	8,800	780
Philadelphia	1,778,314	123,597	2,559,076	214,162	17,479,170	1,053,086	3,675,416	392,186	6,117,781	229,208
Galveston	1,008	52					9,719	2,483		
Sabine	3,897,229	119,117			4,220,920	189,941	2,100	375	32,130	2,295
Total	6,622,613	304,666	3,118,077	302,626	84,650,192	5,456,296	11,915,153	1,541,986	7,145,129	272,582

THREE COMPANIES ELECT DIRECTORS.

The annual meetings of the Amalgamated Oil company, the Salt Lake Oil company and the Arcturas Oil company were held at the Associated's office in the Kern River field last month, being the principal place of business of the companies. Directors were chosen as follows:

Amalgamated—Burton E. Green, F. B. Henderson, M. J. Connell, W. S. Porter, F. H. Buck.

Salt Lake—Burton E. Green, F. B. Henderson, M. H. Whittier, W. G. Kerckhoff, F. H. Buck.

The Arcturas named the same directors as the Salt Lake.

At the subsequent meeting of the directors Burton E. Green was made president of each company, and F. B. Henderson general manager, Charles B. Anderson secretary and F. B. Sutton assistant secretary.

CENTRAL'S ANNUAL MEETING.

The Central Oil company re-elected its directors and officers at the annual meeting Feb. 11, held at the Whittier wells, where the main office has been located to escape the city franchise tax, as follows:

W. W. Neuer, president; H. R. Lacey, vice-president; Robert N. Bulla, secretary; J. M. Elliott, treasurer; W. H. Cook, Phillip Force, and I. B. Newton. The city branch office will be removed from the fourth floor of the H. W. Hellman building to the Lissner building, 524 South Spring street, the last of the month.

A 6 per cent dividend, payable quarterly, was fixed, all surplus payments to be classed as extras. The total paid to date is $541,370.31, on a capitalization of $1,000,000, and $921,000 issued, over 50 per cent.

The Union has paid $4,656,363.15 on $23,692,000 issued capitalization at present, or $43,146,891 issued for the Union, Union Provident and United Petroleum combined. Amalgamated, $900,000 on $5,000,000; Associated $1,522,309.39 on $40,000,000; Columbia, $147,870 on $1,000,000; Western Union, $484,951 on $1,000,000.

Well No. 33 came in Friday last at 1900 feet and makes an excellent showing. It is some distance southwest of the others and yields a 22 gravity.—Los Angeles Times.

MONTEREY COUNTY

Surprise is expressed and much interest felt among oil men at the Standard's purchase of the 320 acres of the Topo Valley Oil Company in the Monterey-San Benito county field for a little less than $20,000, the figure supposed to have been asked, as announced in the Los Angeles "Times" a few days since. The land is several miles from the Lonoak's late strike and near the Standard's leases on the Dunne and Brown ranches in the Topo Valley, between twenty and twenty-five miles northwest of King City. The McCray brothers, F. R. Kellogg and others interested in the Topo have still 1000 acres under lease, which they are holding to await the Standard's developments.

Information to the effect that the Lonoak Oil Company which has been drilling for oil for several months past in Monterey county near the Coalinga-Monterey pipe line, brought in a 1500 barrel well the first of the month, has been received. The location of the well is on section 8-19-10. The oil is said to be about 17 gravity, Baume.

The territory in the vicinity of the Lonoak holdings has been acquired by the Standard, while a few miles to the southeast is the great Peach Tree ranch of 8000 acres, belonging to Henry Miller, which is under a lease to the Union Oil Company. It is reported that there is also considerable activity in the way of prospect drilling in the vicinity of Parkfield.

The building of the Stone Canyon railroad has rendered this new section comparatively easy of access and this has tended to stimulate activity. The heavy snowfall this winter has made surface prospecting rather difficult, however.

A well authenticated report is current that the Southern Pacific railroad is negotiating for the extensive land holdings of the Monterey Coal company, which lies just over the summit, west of Coalinga. If this purchase is made the railroad will extend its line west from Alcalde to tap the coal measures and afford an outlet for the immense deposits of bituminous coal, said to exist in these mines.

MALHEUR OIL FIELDS, MALHEUR COUNTY, ORE.

The first location of oil claims was made in Malheur County, Oregon, about the year 1900. Part of the land has been held continuously since that time by relocation every year. Up to about fourteen months ago no discovery work was done before locating under the placer mining laws.

In 1902 the late Sol. Hirsh, ex-United States Minister to Turkey, of Portland, Oregon, and his associates installed a standard rig in this field and put down a well about 1,000 feet, with a good showing of oil. However, upon the death of Mr. Hirsh, the work was stopped and a number of years later the rig was sold to the Malheur Oil & Gas Development company. This company has a well down about 1,200 feet on section 31-19-44. They have had

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good showings of oil but have had trouble with the water. The Columbia Oil & Gas company is sinking on section 4-20-44 and is down about 500 feet. Early in February a gas "blow out" blew mud and water over the top of the derrick. A small stratum of oil sand and a small seepage of oil have been found.

The Mammoth Oil & Gas company, organized October 3, 1908, has the largest holdings of any company in the field—7680 acres. This company has moved steadily forward since its organization and by March 1st will have installed its new standard rig, which it has just received from the factory in the east, and will commence drilling on section 6-20-45.

The Malheur field has been passed upon by many oil men and by three experts, viz.: M. M. Ogden, of San Francisco, who in his reports several times compared the indications in this field with those of the Kern River district in California; R. W. Eames, of Los Angeles; and D. M. Watson, of Portland.

Mr. Eames, after having been in the field six months, studying the geological formation, reported that the twelve sections owned by the Mammoth Oil & Gas company are located in the most favorable and promising part of the entire field. Mr. Watson, after making a thorough examination of the property of this company, closed his written report by saying: "I am glad to say you have a most flattering prospect for a big oil field."

Within from ninety days to four months either the Mammoth or one of the other companies should have oil in commercial quantities, for there has never, so far as the writer knows, been a single adverse report on this field. Besides the above-mentioned companies, two others are expecting to drill the coming summer.

Templor-McKittrick Wells No. 1 and No. 2 Taken from the Cook House

NEW INCORPORATIONS.

A new company, styled the Valley Oil Company, has been incorporated at Coalinga to operate the lease on the Kreyenhaggen forty adjoining the city on the west. D. A. Stokes is the promoter of the company and associated with him are W. H. Worswick and F. M. Pool of Fresno, and A. S. Axtell, S. Thompson, R. Parks, N. S. Needham and E. C. Murray of Coalinga. The capital stock of the company is $100,000.

The Empire Oil Company has been incorporated in San Francisco with a capital stock of $200,000 by S. A. Gilbertson, H. A. Whitley, E. A. Guilbault, P. J. Muller and L. O. Cannon.

The Canaros Oil Company has been incorporated in San Francisco with a capital stock of $400,000 by F. N. Kimble and E. Hirschler.

The Alpha Oil Company has been incorporated at San Francisco with a capital stock of $500,000 by B. J. Reilly, R. O. Hobson, F. H. Lathrop, G. H. Smith and L. J. Lathrop.

The Azores Oil Company has been incorporated at Hanford with a capital stock of $3,500, by J. M. Robertson, M. J. Caetano, A. F. Nunes, S. M. Rosenberger and L. C. Dunham.

Lake Oil Co., with a capital stock of $75,000, has been incorporated at Hanford, by H. J. Light, C. H. Bailey, R. A. Moore, G. E. Chinn, and W. L. Scally.

Santa Rita Oil Co., with a capital stock of $100,000, has been incorporated in San Francisco by H. H. Hart, J. C. R. Rudolph, J. H. Lewis, E. L. Firster and R. R. Moody .

Coalinga Star Oil Company, with a capital stock of $1.-000,000, has been incorporated in San Francisco by C. S. Reynolds, P. Righetti, J. M. Byrne, John McMullen and J. H. Barnard.

The Coast Line Oil Co. has been incorporated in Fresno with a capital stock of $300,000 by A. E. Wallace, of San Bernardino; G. J. Wells, Frank Hanson and G. M. Emerson, of Fresno, and C. K. McKenzie, of Los Angeles.

The Tally-Ho Oil Company has been incorporated at Salinas with a capital stock of $500,000 by W. A. Conrad, Jr., E. C. Loomis, O. H. Perry, of Arroyo Grande; J. W. Stirling, of Oceano; C. T. Greenfield, of San Luis Obispo; F. E. Bedicheck, of Santa Maria, and R. C. Jensen of Guadalupe.

The Virginia Crude Oil Company has been incorporated by H. M. Irelan, J. B. and Louise E. Wanney, all of Oakland.

The Coalinga-Kern Oil Company has been incorporated here with a capital stock of $100,000 by J. B. Wrenn, F. W. King and J. Robinson, of Bakersfield.

The White Star Oil Company has been incorporated at Los Angeles with a capital stock of $100,000 by R. Arenz, W. W. Martin, W. H. Fuller, T. E. Shreiber, G. N. Fuller and others.

The East Coalinga Oil Company has been incorporated by P. Righetti, C. F. Reynolds, J. M. Ryme, John McMullen and J. H. Bernard, of Bakersfield.

PERSONALS

G. S. Johnson, one of the live Goldfield mining men, is visiting the various oil fields of California with a view of becoming interested in the oil business.

A. G. Nichols, editor of the "Oil Industry," of Los Angeles, was a visitor in San Francisco during the past two weeks on business.

Col. Willis George Emerson, of Los Angeles, is acquiring large holdings of proved oil ground and will shortly be heard from as an oil operator.

George Cary, president and field man of the Templor McKittrick Oil Company, was in San Francisco a few days ago to attend the meeting of the board of directors.

Templor-McKittrick Wells No. 1 and No. 3, taken from No. 2. The 1,000 bbl. tank is shown on the hill to the right. This tank is nearly in the N. E. corner of the property. Just between the two derricks, but very indistinctly, is shown the loading rack at Asphalto

H. B. Guthrey, the well-known oil man of California, was in San Francisco a few days ago on his return to Los Angeles from New York, where he has been for the past month on a business trip. Mr. Guthrey reports fine prospects in the East for the oil business.

John M. Wright, of the Peerless, Fulton, and other oil companies, spent a few days in the field, looking after their interests. He reports that the output of the Fulton is being rapidly increased by the use of the air compressors which the company is installing.

An oil inspection bill which makes the chief mine inspector ex-officio state oil inspector, has been introduced in the Oklahoma Legislature by Senator Yeager. He is to appoint a chief oil inspector, who may be removed at will, and a deputy for each judicial district. Each deputy is to receive 50 per cent of the fees collected, the other half to go to the state. The flash test is fixed at 105 degrees Fahrenheit. The fine for selling oil not inspected is not to exceed $100. The charge for inspection is to be 5 cents per barrel in bulk at refineries or tank stations; 15 cents per barrel for lots of fifty barrels or more, and 25 cents per barrel for less than fifty-barrel lots. The chief oil inspector receives a salary of $1,500 and traveling expenses. The gravity test for gasoline, naphtha, benzine and similar oils is fixed at 70 degrees.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for The California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Oil-well bailer, David Kimmel, Warren, Pa., 908,680.

Apparatus for treating distillation gases, Linus Wolf, Dubendorf, Switzerland, 909,125.

Bottom-hole packers, Charles M. Heeter, Butler, Pa., 909,593.

Well-packer, Wm. H. Kesselman and Louis P. Kesselman, Parkersburg, W. Va., 909,609.

Oil-settling tank, Otto Zobler, Chicago, Ill., 909,733.

Pump, Ira E. Smith, Stockton, Cal., 909,955.

Pump rod grapple, Jno. A. Holmberg, Lindsborg, Kans., 910,062.

Well-drilling machine, Jas. G. Russell, Stewart, Ohio, 910,235.

Desulfurizing lima or analogous petroleum and related oils, Clarence I. Robinson, West New Brighton, N. Y., assignor to Standard Oil Co., Bayonne, N. Y., 910,584.

Well mechanism, Mahlon E. Layne, Houston, Tex., 910,696.

Casing-head, Chas. A. Waitz, Rouseville, Pa., 910,885.

Fish-iron, Carl Shroder and Jno. Christianson, Luck, Wis., 911,167.

The following listed companies paid dividends in February:

	Amount Per Share.	Amount of Dividend.
Amalgamated	$1.00	$50,000
Brookshire	.02	10,000
Caribou	.25	20,175
Columbia	.01	29,992
Claremont	.01	4,500
Coalinga Pacific	.10	6,500
Euclid	.01	3,500
Esperanza	.01	1,600
Four	.01	3,000
Home	.02	2,000
Illinois Crude	.01	2,000
Junction	.01	2,500
Kern River	.10	2,000
Linda Vista	.01	3,838
Lucile	.10	2,670
Peerless	.06	6,000
Piedmont	.01	3,890
Pinal	.15	22,500
Royalty	.04	800
S. F. McKittrick	.30	15,000
Sauer Dough	.05	9,975
Union	.50	117,711
United Pet.	.50	40,375
Total for February		$340,526

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

	Bid.	Asked.
Alma	50	85
Associated Oil Tr. Cer.	38 50	38 75
Brookshire	1 45	1 55
Caribou	11 00	
Chicago Crude	08	10
Claremont	1 55	1 60
Coalinga Pacific		5 00
Daisy	25	
Esperanza	1 00	
Euclid	50	
Four		32
Fulton	2 00	
Globe	16	
Home		91
Illinois Crude		28
Imperial		40 00
Junction	65	75
Kern	50	60
Kern River	9 00	
Lucile	9 50	
McKittrick		40
Monte Cristo	2 32½	2 37½
Mountain Girl	24	
Occidental	25	
Peerless	5 55	
Producers'	2 25	
Rico	1 65	2 00
Royalty	2 75	
Sacramento	1 00	
S. F. & McKittrick	24 00	
Sauer Dough	1 80	2 50
Shawmut		71
Sovereign	20	25
S. W. & B.	40	
Superior	20	
Sterling	4 25	4 30
Thirty-Three	2 00	
Turner	61	
Union	101 50	
Wabash		1 40
Wolverine	25	
W. K. Oil Co.	1 40	1 50

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We advised the purchase of Templor Ranch at ten (10) cents per share, now worth twenty (20) cents; San Francisco and McKittrick at thirteen (13) dollars, now worth twenty (20) dollars; Monte Christo at ninety-five (95) cents, now worth one dollar and ninety-five cents ($1.95).

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THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., May, 1909 No. 1

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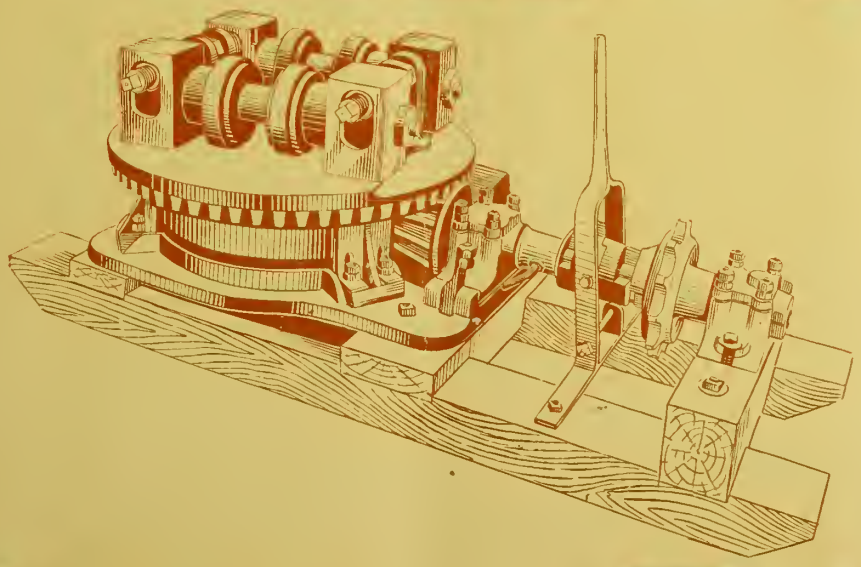

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THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., May, 1909 No. 1

ON THE PROPERTIES OF JAPANESE KEROSENE

By K. KOBAYASHI

(Translation revised by H. N. Cooper.)

The commercial varieties of Japanese kerosene are very numerous and their sources are now limited to three chief fields in Echigo, namely, Higashiyama, Nishiyama and Kubiki. Are all these Japanese petroleum composed of the same hydrocarbons or not? This is the first important question for our petroleum industry. In order to give light on this first question it is necessary to not only investigate the physical and chemical properties of these crude oils, but also to examine the properties of kerosene from these districts and compare them with foreign kerosene in Japan. I can not fully answer to this first question in this report, but I intend to present on this subject some data obtained from my investigations. I have examined three samples of burning oils. As to the types of import oil in Japan: There is the American petroleum "Chester," the Russian petroleum "Anchor," and the Borneo petroleum "Tank Oil." And I have also examined many commercial burning oils of our own country. Generally speaking, there are two distinct varieties of kerosene in Japan. One is called "first-class oil" and the other is the so-called "second-class oil." The so-called "first-class oil" is an oil composed of suitable portions for burning oil. The so-called "second-class oil" is a mixed oil, since they have a large proportion of tailings or heavy oil.

Color and Fluorescence.

The American petroleum "Chester" is of a decided yellow without any blue fluorescence. The Russian petroleum "Anchor," and the Borneo petroleum "Tank Oil," are both light yellow or standard white. First-class oils of Japanese petroleum are generally white with blue fluorescence, and second-class oil shows a light yellow color, with strong blue fluorescence. It is a very curious fact that burning oil from Kubiki have a characteristic blue fluorescence.

If the washing of petroleum is not perfect then the petroleum will be tinted a yellowish hue. A decided yellow often indicates the presence of heavy oil. But the color is not an important character in judging the quality of burning oil.

A method of tinting petroleum to increase the red color by the addition of a small quantity of Alizarin black S. R. W., or Alizarin black S., was in practical use in Tokyo, proposed by myself to distinguish an oil from all others. Consumers are thereby enabled to ascertain at a glance the quality of the petroleum supplied to them.

Odor.

The odor of all import oils is faint and not disagreeable. Japanese first-class oils are the same as the above, but the second-class oils have some peculiar odor, caused by cracking, or imperfect purification. Especially have the oils from Higashiyama a disagreeable smell, which is not removed by treatment with the usual reagents.

Specific Gravity.

The density of each kerosene was determined at 15.5C. The results obtained are as follows:

	Spec. gravity
American oil "Chester"	0.8043
Russian oil "Anchor "	0.8274
Borneo oil "Tank"	0.8223
Japanese oil Higashiyama A	0.8200
Japanese oil Higashiyama B	0.8520
Japanese oil Nishiyama A	0.8323
Japanese oil Nishiyama B	0.8270
Japanese oil Kubiki A	0.8205
Japanese oil Kubiki B	0.8290
Japanese oil "Japanese Chester"	0.8514

American petroleum "Chester" is the lighter and "Japanese Chester" is the heavier of the above samples. "Japanese Chester" is a refined oil, manufactured by the International Oil Company in Echigo (Standard Oil Co.)

It is said that the specific gravity of ordinary American kerosene is from about 0.790 to 0.800, and the parallel product from Russia is about 0.822. There are many varieties of Japanese kerosene, hence the specific gravity is not constant. But broadly speaking it is found that the specific gravity of ordinary burning oil is about 0.825. From this point of view American kerosene differs totally from the other three, i. e., Russian, Borneo and Japanese kerosene. I must add here that this testing was conducted three years ago. At present the quality of so-called "Tank oil," imported from Sumatra, is totally different from the one described above. Specific gravity of new tank oil is lower than the former one, and flashing point is lower, too. "Anchor" oil is not imported to our country now.

Flashing Point.

It is evident that we can not judge the quality of kerosene by its color, odor and specific gravity. In addition, we must determine the flashing point. I have tested the flashing point of samples by Abel's closed oil tester. The flashing point of Japanese burning oils is very low, compared with the import oils. Japanese B kerosene will generally take fire when a light is applied at ordinary temperature. For Japanese kerosene we can not apply the method as described in the directions for the use of Abel's tester, directly. Therefore I have modified the method according to Allen's description. The results obtained are as follows:

	Flashing Point
American oil "Chester	75° F.
Russian oil "Anchor"	87° F.
Borneo oil "Tank"	84° F.
Japanese oil Higashiyama A	68° F.
Japanese oil Higashiyama B	59° F.
Japanese oil Nishiyama A	73° F.
Japanese oil Nishiyama B	71° F.
Japanese oil Kubiki A	68° F.
Japanese oil Kubiki B	65° F.
Japanese oil "Japanese Chester"	78° F.

Generally speaking, the flashing point of all Japanese oil was very low at the time of my examination. There is no legal limitation of flashing point at present in Japan.

After many tests of kerosene which were made by mixing known quantities of light and heavy oils in definite proportions, I have proved that we cannot judge kerosene by mere flash test. For example:

c. c. taken (A) oil fl. pt.—83° F.	c. c. taken (B) oil fl. pt.—59	fl. pt. of mixed oil
0	100 c. c.	59 ° F.
10	90 c. c.	64 ° F.
20	80 c. c.	66 ° F.
30	70 c. c.	68 ° F.
40	60 c. c.	69 ° F.
50	50 c. c.	71.5° F.
60	40 c. c.	73 ° F.
70	30 c. c.	76.5° F.
80	20 c. c.	78 ° F.
90	10 c. c.	80 ° F.
100	0 c. c.	82 ° F.

It is clearly understood that the flashing point of Pennsylvania oil is higher than that of Russian oil, considering the

parallel fractions. The flashing point of one oil depends upon its boiling point. I investigated the relation between the boiling point and specific gravity of parallel fractions from various kerosenes.

Source.	Fraction. 175° C—200° C.	Fraction. 250° C—275° C
American oil	0.7733	0.8117
Russian oil	0.8131	0.8503
Borneo oil	0.8119	0.8566
Japanese oil Higashiyama	0.8085	0.8565
Japanese oil Nishiyama	0.8138	0.8647
Japanese oil Kubiki	0.8187	0.8639

Therefore we can not get the kerosene from Japanese crude oil which has just the same flashing point as American oil, assuming that both fractions are in the same limitation between some boiling point.

Fractional Distillation.

By mixing the naphtha and heavy oil, kerosene may be manufactured without altering the specific gravity and without reducing the flashing point. Therefore in all cases the fractional distillation test is most important. I have conducted the fractional distillation of burning oils in 500 c. c. of each sample, in the glass flask of one litre capacity. The flask was wrapped round tightly with copper foil to protect it from too rapid changes of temperature and was connected by a Glinsky dephlegmator with a Liebig's condenser. The thermometer was fixed in the dephlegmator so that the bulb was on a level with the exit tube. The results obtained were as follows. Each number denotes the volume percentage:

	125° C	125° C—150° C	150° C—175° C
American oil (0.8068)	—	5	102
Russian oil (0.8253)	—	15	126
Borneo oil (0.8223)	—	39	103
*Japan oil (A) (0.8200)	—	43	96
*Japan oil (B) (0.8320)	—	53	72
*Japan oil (C) (0.8290)	27	60	51
*Japan oil (D) (0.8514)	—	51	116

*(A) Higashiyama.
*(B) Nishiyama.
*(C) Kubiki.
*(D) "Japanese Chester."

175° C—200° C.	200° C—225° C.	225° C—250° C.	250° C—275° C.
55	16	41	80
111	56	92	61
112	101	55	45
105	44	57	68
86	42	75	67
81	18	90	83
73	76	110	74

275° C—300 °C.	300° C.	Light oil	Normal oil	Heavy oil
82	119	1.0	58.8	40.2
.. 39	..	3.0	89.2	7.8
.. 45	..	7.9	83.2	8.9
44	43	8.6	74.0	17.4
46	59	10.6	68.6	21.6
42	48	17.4	64.6	18.0
.. 51	..	...	89.8	10.2

It will be observed that the American petroleum "Chester" contains very notable quantity of oil, which distills above 275°C., and Japanese oils contain a large quantity of oil which distills below 150°C.

The following results of fractional distillation obtained by measuring the density of each fraction are very interesting, showing the behavior of the parallel products of the above samples.

	125° C.	125° C—150° C.	150° C—175° C.	175° C—200° C.	200° C—225° C.	225° C—250° C.	250° C—275° C.	275° C 300° C
American oil	.....	.....	0.7527	0.7733	0.7927	0.8023	0.8117	0.8258
Russian oil	.....	.....	0.7908	0.8131	0.8264	0.8377	0.8503	.....
Borneo oil	.....	0.7857	0.7953	0.8119	0.8295	0.8431	0.8566	.....
Japanese Oil—								
Higashiyama	.....	0.7679	0.7811	0.8085	0.8322	0.8492	0.8565	0.8777
Nishiyama	.....	0.7737	0.7928	0.8138	0.8394	0.8492	0.8647	0.8775
Kubiki	0.7562	0.7634	0.7822	0.81867	0.8431	0.8639	0.8729	0.8817

From the above results I have found that American oil differs decidedly from the other five in relation to their specific gravity to their parallel products, i. e., Russian, Borneo and Japanese oil are generally distinctly higher density than that from American oil.

This peculiarity is also shown by the following table obtained by fractional distillation, each fraction being one-tenth of each sample by volume, the density being determined of each.

	1	2	3	4	5	6	7	8	9
American oil (0.8068)	0.7550	0.7670	0.7760	0.7908	0.8035	0.8150	0.8190	0.8265	0.8314
Russian oil (0.8223)	0.7861	0.7902	0.8005	0.8136	0.8248	0.8289	0.8381	0.8442	0.8533
Borneo oil (0.8200)	0.7982	0.7990	0.8010	0.8084	0.8163	0.8260	0.8370	0.8410	.....
Japanese Oil—									
Higashiyama (0.8200)	0.7646	0.7725	0.7884	0.8002	0.8140	0.8326	0.8400	0.8515	0.8595
Nishiyama (0.83220)	0.7805	0.7888	0.7986	0.8110	0.8294	0.8485	0.8565	0.8605	0.8700
Kubiki (0.8205)	0.7941	0.7970	0.8025	0.8061	0.8105	0.8141	0.8260	0.8363	0.8501
"Japanese Chester" (0.8514)	0.7886	0.8047	0.8156	0.8322	0.8411	0.8547	0.8609	0.8772	0.8819

Capillary Power.

This power is also called viscosity by H. N. Cooper. American kerosene "Chester" may give a good light at first, but after some time the flame will greatly diminish in size and luminosity, and in the extreme case the wick becomes so clogged and charred as to cause extinction. Russian oil and Borneo oil do not give as much light as American, but on the other hand there is considerably less diminution as the level of the oil falls in the oil reservoir. Of course these characteristics partly depend on the quantity of heavy oil contained, but chiefly on its capillary power. The capillary power test is very simple, but there is no definite method. I have used white blotting paper strips one foot long and half an inch wide, scaled each half inch, hanging on a wooden frame. The oil to be tested was previously tinted deep red by the addition of two or three drops of Alizarine black solution. The number of seconds required by the oils for ascending the strips was observed. Though the following results are comparative, yet it will be observed that these kerosenes have a different capillary power.

	Number of minutes observed to 2"	to 3"	to 4"	to 5"	to 6"
American oil	8 min.	23 min.	49 min.	87 min.	140 min
Russian oil	6 "	17 "	36 "	64 "	103 "
Borneo oil	4 "	14 "	30 "	53 "	93 "
*Japanese oil (A)	6 "	17 "	38 "	68 "	112 "
*Japanese oil (B)	5 "	15 "	31 "	67 "	99 "
*Japanese oil (C)	7 "	18 "	41 "	77 "	123 "

*(A) Higashiyama. *(B) Nishiyama. *(C) Kubiki

In the fractions from one oil, the heavier fraction has less capillary power than the lighter ones.

American Oil "Chester"	Number of minutes observed to 2"	to 3"	to 4"	to 5"	to 6"
200° C.-225° C.	7	18	35	75	134
275° C.-300° C.	7	37	79	145	240

American oil differs widely in the rapidity with which it ascends the wick, compared with the other five samples. Also it is a notable fact that Borneo oil has the greatest capillary power, compared with the others. The capillary power of kerosene is independent of its density; it depends chiefly upon its composition; on the hydrocarbons and impurities. I think there is also some intimate relation between capillary power and solidifying point of kerosene.

Cold Test.

The cold test is generally only applicable to lubricating oil, not to burning oil, but I have applied this test to each fraction of the above samples with a view to ascertain the relation between the solidifying point and capillary power of burning oil I have examined each fraction in a test tube by slow cooling and noted the temperature at which oil no longer flows on inclining the tube quickly. Russian oil and Borneo oil bear exposure to a very low temperature without becoming solid or even depositing any paraffines. Nishiyama and Higashiyama oils are similiar to Russian or Borneo oil in this respect American oil solidifies and separates paraffine scale at 6° C., and Kubiki oil solidifies at 10° C. I have observed in the case of Kubiki oil that the separated pasty mass, after purification, was a mixture of vaseline and paraffine.

To be continued.

NATURAL GAS RESOURCES OF THE UNITED STATES.

Report of Dr. Day, Petroleum Expert, to National Conservation Commission — Probable Duration of Supply — Enormous Daily Waste—Natural Gas as a Fuel for Power Purposes, Etc.

The National Conservation Commission has made public an important paper on the natural gas resources of the United States, with special reference to the probable duration of the supply, prepared by Dr. David T. Day, the petroleum expert of the United States Geological Survey. The close relation between the production of natural gas and petroleum, especially in the newer and more productive fields, renders Dr. Day's report of special interest. The text is as follows:

"The conditions favorable to the accumulation of gas reservoirs are in general the same as for petroleum. The two usually overlap. More or less gas is always found dissolved in crude petroleum and the amount of gas obtained from a given pressure from a sand of slight thickness leads to the belief that the gas is dissolved in the petroleum under pressure, similar to the solution of carbonic acid in water. Reservoirs filled with dry gas are often found—almost always in the neighborhood of petroleum fields—though beds of coal often yield natural gas even when far from oil wells, as in the anthracite mines of Pennsylvania, where gas is found more than 100 miles from the nearest petroleum pool.

"The areas in the United States in which either natural gas or petroleum is the more valuable product have recently been revised and now show the following measurements in square miles:

	Sq. Miles.
Alabama	40
California	310
Colorado	80
Illinois	50
Indiana	2,460
Kansas	550
Kentucky	290
Louisiana	110
Michigan	40
Missouri	70
Montana	40
New York	550
Ohio, Eastern	110
Western	165
Oklahoma	1,000
Oregon	20
Pennsylvania	2,730
South Dakota	80
Texas	130
Utah	40
Washington	70
West Virginia	1,000
Wyoming	120
Total	10,055

Probable Duration of the Supply of Natural Gas.

"The duration of high pressures in the known fields is very limited. There is no probability of the pressures exceeding 100 pounds per well after ten years. The rate of decline is a peculiar one. At first very rapid, it would be expected that the decline in pressure would follow a simple rate, but it does not. Many wells are still showing a slight but appreciable yield by pumping them after the pressure became negligible. The yield from these low-pressure wells is surprisingly persistent. Evidently the territory drawn upon by them is much larger than was expected. This industrial enterprise of pumping natural gas in order to utilize the entire supply is the most hopeful element in the outlook for a continued supply. It is this feature which made possible the use of a larger quantity of natural gas last year than the year before. The outlook is that natural gas will be utilized for as long a period as has already elapsed since the industry began, with the greater part to be furnished by the mid-continent field.

"Waste of natural gas will be divided into three classes: First, waste incident to the discovery of a natural gas field; second, waste in oil production; third, waste in consumption.

Waste From High-Pressure Wells.

"It has been a common experience in the discovery of a gas field to encounter pressures so great as to lead to great difficulty in capping, and thus confining the gas until needed. Great instances of this were the Homewood well, near Pittsburg, the Karg and Adams well in Ohio, the Caney Fork well in Kansas, and, more recently, the wells of the Caddo field in Northwestern Louisiana. Individual wells among these have wasted as much as 25,000,000 cubic feet per day, or sufficient gas to supply the entire consumption of three cities the size of Washington, D. C. In the Caddo field at the present time the waste of this character is estimated at 70,000,000 cubic feet per day. In this case, wells are drilled through the gas-producing stratum in the search of petroleum, which is usually found a few hundred feet below. The natural gas is cased off, but, usually due to lack of skill on the part of the driller, actuated by indifference to the waste of gas, the gas escapes around the casing in increasing volume as the earth is loosened from around the pipe, and finally the force of the gas is sufficient to blow the case entirely from the well. This has happened in four cases already in the Caddo field. With a well thus 'blown out,' little effort has been made to close in the well. It has been the practice to set fire to the gas for an advertisement to the region.

Waste of Gas From Oil Wells.

"The production of more or less gas is incident to the drilling of all oil wells, and in most of them, at the time the petroleum-bearing sand is reached, the escape of gas is very great. Taken altogether, the waste of gas by this means is much greater and much more difficult to prevent than the waste from high-pressure gas wells.

"In the first days of oil well drilling in Pennsylvania, natural gas was a nuisance and a menace to the oil producer. This menace became greater with the volume of the gas. It developed a hostility toward natural gas on the part of the oil well driller, which has increased rather than diminished up to the present time. It is to this hostility that the present waste of natural gas in oil regions is due. When natural gas was encountered in a sand above the expected oil stratum, it always cost considerable money to case it off and pack it in order to continue the drilling, and frequently caused explosions, tearing out the side of the well and occasionally blowing out the casing, causing the ruin of the enterprise. Every oil well now drilled includes in its outfit, pipes connected with a gas head for carrying the natural gas to a safe distance. Frequently it is burned to get rid of it, sometimes under the boiler to supply power for the well drilling. This practice has become so general that it is a common custom to pay $5 per 24 hours for the power for an oil-pumping station. When the natural gas contains appreciable amounts of hydrogen sulphide with the consequent injury to health, its presence is proportionately less welcome.

"It is difficult for the oil well driller to obtain a prompt and profitable market for the natural gas, whereas with oil it is only necessary to connect the well to a tank, and the cash for the product can be obtained within a few hours. Occasionally, when the pressure due to natural gas is greatly relieved, oil is found. The oil well driller has accepted this exceptional case as a rule, and is apt to give all possible vent to the gas in the hope of its being followed by the desired petroleum. As to the amount of natural gas which is being wasted daily, no accurate statistics have been attempted, and the judgment of Dr. I. C. White, State geologist of West Virginia, may well be accepted, to the effect that no less than 1,000,000,000 cubic feet of gas are wasted every 24 hours. Of this, undoubtedly the larger part is wasted in the production of oil. Pumping the oil leaves the wells more or less open, and prevents any careful saving of the gas.

Waste in Consumption.

"Directly associated with the waste of natural gas by allowing it to escape freely from oil and gas wells is the form of waste where the gas is used by delivering it through pipes back into the ground in oil wells below the oil-bearing stratum, so that it will spray the oil to the surface. The mixture of oil and gas then runs into a tank, where the oil is saved, but usually the gas is allowed free vent to the outside air. The lack of care in saving the gas after thus using it is a good sample of the carelessness with this material prevalent in the oil fields.

"Where natural gas is utilized for power, heat, and the lighting of dwellings, and has once entered the pipe lines of the distributor, the waste is comparatively small, and little can be said at the present time in regard to any serious loss due to ineffective consumption. Much is used for lighting with incandescent mantles, an efficient use which leaves practically nothing to be desired. A still greater quantity is burned in stoves or in grates, under conditions which are also efficient. For power purposes, there is little excuse for burning gas under boilers for the generation of steam, when so much greater economy can readily be produced by consuming it in internal-combustion engines, and the adoption of the gas engine in the place of steam should proceed with far greater rapidity than at present. The following table prepared by Dr. F. H. Oliphant shows that nine-tenths of all the gas used can be saved by substituting internal-combustion engines for the kind of steam in use in the oil regions.

Comparison of fuel per indicated horsepower per hour for different types of engines:

Type of Engine.	Cubic feet of Gas.
Large natural gas engine, highest type	9
Ordinary natural gas engine	13
Triple expansion condensing steam engine	16
Double expansion condensing steam engine	20
Single cylinder and cut-off steam engine	40
Ordinary high pressure, without cut-off, steam engine	80
Ordinary oil well pumping steam engine	130

THE END OF THE OIL INDUSTRY

It is not so many years ago that your grandmother used whale oil to illuminate your way to the trundle bed, where you slept and dreamed of whales and bears and other monster mammals of the sea and the land. You remember the little metal dish that held the oil and the long, narrow wick that your grandmother knitted of cotton yarn; and you never dreamed in those days of coal oil lamps and mineral gas and electric lights. But these improvements came along, being preceded only a few years by the tallow dip and the tallow candle. Of course, you have use for candles even nowadays, and the coal oil or kerosene lamp lacks a big, long jump of being put out of business by the gas and electric light corporations; but whale oil dips are surely out of fashion.

Of course, there are some of you who do not recall the whale oil dip; but you surely have heard your mother or your grandmother tell of the sperm oil lamps that succeeded them and immediately preceded the coal oil lamps, and how chary the old folk were about adopting the new oil, which they knew would explode, and which smelt bad, and so on.

Well, in your grandmother's day whale fishing and the whale oil and whalebone business were a big industry. In those days, and even in the present day, many of the whaling ships' crews reduced the blubber of the whale to oil on board ship. But notwithstanding the large decrease in the whale oil business, there have been great improvements in the methods and economy of reducing and refining the oil of the whale and the seal and the near-seal and the codfish. And if you will travel as far to the north as Newfoundland, and to the easternmost point of that island—that is to say, to the ends of the American oil trade—you would find a wonderful and interesting practical exhibition of the whale oil business.

To be sure, there is petroleum oil in Newfoundland, and there is asbestos; but the whaling is the biggest business in that section of the North American continent. There the oil is reduced and refined in a systematic and scientific way in the great plants at St. Johns, the capital of the island, situated on the north shore of Freshwater Bay and across the harbor from Cape Spear; and also at other stations.

Mr. Felix J. Koch, of Cincinnati, who recently returned from the land of the big whale business, and who was interviewed for the "California Derrick" for the purpose of this story, gives a graphic account of the industry in its practical, scientific, and economic aspect.

St. Johns proper is situate on the north side of the harbor, but the oil factories extend to the south side, where the principal product is seal oil. The oil stores for the most part are also on the south side of the harbor. Many of the visitors at St. Johns, Mr. Koch says, prefer to visit the Colonial Museum, and get the general information there obtainable as to the various kinds of oil produced, as the factories are not inviting places for the ordinary traveler. The museum contains many specimens, including the oil of the shark, which looks a good deal like the juice of the orange, or orangeade, in color; the whale and the porpoise oils of a brownish black color; the brown seal and the pale seal oils; the brown cod oil, and the pale yellow or frozen cod liver oil.

In the museum there is an Eskimo lamp, made of soapstone, exhibited for the purpose of illustrating the primitive methods of whale oil lighting and heating.

1—A Monster. 2—Pure Whale Oil. 3—A Seal Oil Refinery. 4—The Source of Cod Liver Oil. 5—Extracting Whale Oil. 6—The Whale Oil Factory.

Come to think of it, your grandmother sometimes used a soapstone lamp, especially if she happened to live in a section of the country where serpentine or talc occurred in the geological formation. So you see there was not a great variance in the methods of the savage and the civilized pioneers.

The visitor at St. Johns who desires a more practical view of the whale oil industry calls on Mr. Alexander McDougall, the whale oil king of Newfoundland. Mr. McDougall will tell you that whale are now being taken off the north shore of the island, and at different stations; one at Harbour Grace, another off Trinity Bay, and two at Placentia Bay. These are the chief stations, though there are nine in all, including that at St. Johns harbor, where whale, seal, cod, and other oil-producing fish are taken and put through the factories and refineries.

Previous to the season of 1908, the colonial law allowed only one whaling steamer to a station. But the law has been amended so that now a station can fish any number of whaling steamers. These steamers are provided with bomb guns for

shooting the harpoon. There are ten men in the crew of each steamer, including captain, engineers, firemen, and deck hands. The whalers are Norwegians, who go to their homes when the whaling voyages are ended, and return in the spring when the season opens. The crew share in the proceeds of the voyage, the captains sometimes receiving as high as $3,000 in a season. At times the whale are close in to the harbor, so that a ship may make a trip in a day, returning with two or three whale; at other times they run two to three hundred miles out to sea.

In the earlier days of whale fishing, the harpoon was usually thrown by hand from small boats put off from the ship. That custom still obtains with some whalers, but the bomb gun is the usual method employed in the present day off the coast of Newfoundland. The harpoon is fired at the whale, and if a vital part is struck there is no further trouble; but if not, the whalers may have a fight on their hands that will keep them busy for several hours.

The process of reducing the blubber of the whale and the blubber of the near-seal that is brought down from the Arctic ice is practically the same. Some ten thousand of these near-seals will be put through the factories in a single day. Their weight is about fifty-two pounds each. The hides are taken off and the sculp, or fat, goes through the grinders. This fat and such other fat as is scraped from the skins is first wheeled to a set of endless chain buckets, which carry it to the top of the interior of the building, where it is stored in bins ready when occasion demands to be conveyed to the grinders, which are composed of five cogs each, that reduce the mass to a jelly-like consistency and drop it into the steaming tanks below. Beneath these steaming tanks there are sets of wooden chutes extending in various directions. These chutes carry the ground blubber from the steaming tanks eventually to a vertical iron pipe set in the center of a metal vat. This pipe distributes the mass evenly in the vat and out and into an iron tank that is lined with wicker matting, which holds the refuse and allows the oil to pass through; and thence the oil is carried through pipes to the receiving tanks, where it awaits removal to the sun tanks, and finally it goes to the storage tanks in the cellar or basement of the building. The refuse blubber that is caught by the wicker mat lining of the iron tank is placed in bags and submitted to the action of presses, that take out the remaining oil, which goes with the rest into the sun tanks and to storage.

The sun tanks are employed for the bleaching of the oil; these tanks are of twelve tons capacity each. The roof covering several tanks is like that of a great conservatory made of heavy glass, that reflects the heat of the sun upon the clear orange-colored oil of the seal, and through which the bottom of the tank is discernible, while the shadows of the roof sash play upon the surface of the oil with the movement of the sun. In eight or ten days the oil is bleached white and becomes as thin as water, but thickens again after being placed in the cool storage tanks in the cellar. From the storage tanks it is run into casks of forty-two gallons capacity and is ready for shipment.

The production of cod liver oil is another interesting process, quite different in the method from the whale and seal on operations. The initial operation is performed by three persons, the first taking the cod out of a tub and placing it on its side on a wooden table; then, with two strokes, he draws a knife across the neck and down the belly of the fish, which he slides along the table to the next man; the second man jerks the head from the fish and throws the head into a barrel, to be consigned, with the entrails, to be reduced to fertilizer; this man rips the belly open, loosening practically all the entrails and the liver; the next operator, usually a woman, finishes the task and separates the liver from the intestines, ripping them out with her hands, and occasionally drawing a bit of blood in the operation.

The livers are boiled and strained through a series of six cloths, until no dregs remain. The oil is then passed to the cooling room tanks, where it is frozen in a temperature of six degrees below zero. This cooling room is, in fact, a galvanized-iron shed with an iron door, behind which are two sets of wooden doors opening into the freezing chamber. In this wooden apartment are tubular tanks containing ice and salt, which perform the freezing. The oil is then placed in tin-lined barrels of twenty-five gallons capacity for shipment.

The livers must be put through the entire process within twenty-four hours after they are removed from the fish; otherwise they will spoil and be unfit for producing oil.

In some of the villages, cod liver oil is produced by the Norwegian precipitation process, notably by W. Munn, at Harbour Grace. In other places the oil is obtained by a refining process, and kept at the necessary temperature to preserve it.

Codfish are plentiful off shore of most of the villages, and the oil industry on small scale is conducted by many of the fishermen and their families, though their processes are crude compared with the operations of the big refineries. As a food product also the cod of Newfoundland is quite generally used by the natives of the island.

The islanders are speedily getting away from the primitive whale oil lamps and adopting kerosene for illuminating and heating. The introduction of petroleum oil has had a marked effect on the natives, and especially on the younger generation. They are as quick to appreciate the improvement of the kerosene lamp over the soapstone whale oil dip as are some of their more enlightened neighbors in other parts of the continent. The caribou hunters have quite generally adopted the kerosene stoves, which they carry with them in their packs. They consider them more economical, as they save the everlasting search and labor formerly required to obtain fuel. Then, too, the kerosene stove has the further advantage that it produces no blaze as does the ordinary wood fire in the open, and hence does not frighten the game away from the vicinity of their camps.

The kerosene torch is employed by the steamers on Virginia Lake for illumination at loading time. And elsewhere and in other ways the use of petroleum is being speedily introduced to the people of Newfoundland as an economic substitute for the whale oil for domestic and industrial uses. The soapstone lamp of Newfoundland will soon be found only in the museums, and the story of its uses will be told to the youngsters to illustrate the primitive methods of their great grandmothers, just as it is being told to you or your children as a tale of the pioneer days.

The whale is an historic and withal a useful carnivorous cetacean mammal, but for the purposes of producing light and heat, petroleum has got him skinned from the flukes of his broad tail to the top of his enormous head.

AMERICAN OPERATORS ACTIVE IN MEXICO.

Tampico, Mexico.—Many of the larger independent oil producers of the United States, particularly of the Texas and Oklahoma fields, have entered the Mexico fields. The Texas company, which is controlled by John W. Gates, and is one of the largest independent oil producers and refiners in the Texas and Oklahoma fields, has acquired extensive oil land holdings in Mexico, which it is developing. The J. M. Guffey Petroleum Company, another big independent oil producer and refiner, has also entered the Mexico territory. Many of the independent oil producers of Kansas, Oklahoma, Texas, California, Pennsylvania, and Illinois-Indiana fields have obtained leases upon thousands of acres of oil land in the Tampico territory and are preparing to develop their holdings on an enormous scale. The Mexican Petroleum Company, which is said to have the largest developed oil property in Mexico at this time, although many of its wells are capped, is another American concern. In fact, it may well be said that Americans are already practically in position to control the oil industry of Mexico at this time, although the British firm of S. Pearson & Son, Limited, is doing the bulk of the actual business in the producing, refining, and sale of the native product just now.

The activity of Americans in purchasing and leasing oil lands in the eastern coast territory, bordering on the Gulf of Mexico, extending all the way from the Rio Grande on the north to the Guatemala line almost, on the far southeastern part of the country, is something remarkable. In some localities they are in large numbers. This is specially true of the Dos Bocas locality, where the phenomenal oil geyser was brought in several months ago and has since then been transformed into a broad lake of boiling water and oil.

Well-drilling outfits are being unloaded at stations along the lines of the Mexican Central every day and are transported to the localities that are being developed. Experienced workmen are coming in from the United States on every train and this American invasion is to be witnessed on every hand. The Mexicans are taking little active interest in the preparations that are going on around them for this wonderful oil development beyond looking after the sale or lease of their lands. Very few of them are interested in actual oil production.

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POOR ARGUMENT

It seems to us that the oil industry of California should be treated in a sane and sober manner and not be made a football of by injudicious and unreliable reports at so-called strategic points along the line of commercialism, no matter whether or not ulterior motive may be manifested in such comment.

There is a difference between sober judgment expressed in a legitimate manner and canards evidently designed to influence public opinion and create distrust of conditions. There are critical periods in all lines of industry, and much harm can be done at those times by pretended disinterested statements of so-called facts. There is such a thing as arbitrarily creating an apparent condition by the manipulation of figures and gross misstatements, and we think such has been the case in the question of overproduction of oil in this State at this time.

When we consider that it is very easy to create an imaginary condition and then argue from that standpoint to a positive conclusion, all of which, by the positiveness of the statements made, makes it appear as authoritative, we can see how easy it is to create an impression on the public mind erroneous in every particular. All conclusions drawn from false bases are naturally erroneous.

In this instance where the statement was made that there was an overproduction of oil in this State, the starting point was wrong and the overproduction imaginary, and therefore the entire fabric of argument fell of its own weight. Although it raised just expressions of indignation, there was no real necessity for such sentiment, except possibly as a result of momentary feeling such as will always come to those interested in an industry when they see it being attacked and misrepresented in the house of its supposed friends.

But it is all over. The public has learned that there is no overproduction of oil, but on the other hand a vast underproduction in comparison with the demand at hand and the loss of business within the last three months simply through lack of oil to sell.

The largest field of the State, Coalinga, does not have on hand at any time more than a few days' production. Santa Maria production is being taken care of as fast as it comes from the ground, limited only by pipe-line facilities. The southern fields are cleaned up right along, and where, then, is the overproduction? Were there an overproduction, the price of oil would decline of its own accord. Instead of that, we see the price advancing everywhere except in the fields where contracts are made from year to year. We have noted an instance in western Kern County since this howl about overproduction was begun, where the price of oil has been increased several cents per barrel.

A WELL POSTED EDITOR.

The "California Oil World," in a recent issue, made a startling editorial statement concerning the production of the Baku oil fields of Russia, which, in part, follows:

> "The facts are stranger than fiction. A territory at Baku no larger than a single township furnishes more oil than the whole United States, and has continued to do so for many years. Our consular reports show also that the percentage of increase in that field is greater for the last five years than it has been here."

Let us see what the United States Government says in its official documents, compiled from consular reports. Here are the figures, showing the Baku production for five years, 1903 to 1907, inclusive:

1903	71,618,386	barrels
1904	73,723,290	"
1905	49,791,356	"
1906	53,723,889	"
1907	57,143,097	"

The United States produced, in round numbers, 166,000,000 barrels in 1907, and in 1908, according to unofficial estimates, the total was somewhat in excess of that amount.

It may be of interest to know that the proportion of production of the United States or the entire production of the world is 63.12 per cent; that of Russia, including Baku, is 23.5 per cent. This does not indicate any such state of affairs as one might be led to believe if he were to depend upon such "imaginary" statements as the opening paragraph of this article.

If the statement were true it would seem that there might be some foundation for an "overproduction" scare in Baku, and the world as well. The recent unpleasantness about our own California production might possibly have been reckoned from the same standpoint of "authoritative" and "indisputable" figures as these from Baku.

And this about Baku was written by the infallible editor of the "California Oil World."

Wow!

CONDITIONS UNCHANGED

No apparent decrease in drilling operations in the various districts of the State are noticeable as a result of the overproduction agitation, indicating the confidence of operators in the future of the market for oil. Neither is there any indication of a drop in prices as fixed at the present time. As a matter of fact, prices, aside from the independent agencies' contracts and those of companies not in the agencies, are exceedingly strong and new contracts are being made at higher prices.

None of the marketing companies, so far as can be learned, have refused any oil from any source, but on the other hand are paying, in some instances, more than contract price. Were it a fact that there was a real overproduction the Associated, for instance, would scarcely feel obliged to take any more oil than they were actually obliged to take under contract, and that company would naturally feel like making its own price in such an event. Not so, however. Were there an overproduction some one would feel the effects. The first would be the producer, and he would be the principal sufferer. But so far the only apparent effect has been that investors have been scared to some extent from putting their money into oil. This is a condition most desired by those who wish to monopolize the oil business of California and retain the big profits now being made and to be made in the future. "Keep the public out," is the watchword, "the business is too profitable for us to share it with any more people than we have to."

HIGHER PRICE FOR OIL.

E. B. Campbell, of the Kern River fields, has been awarded the contract to supply Fresno city, Fresno county and Los Angeles with Kern county oil for road purposes.

The price nets Mr. Campbell 72 cents in the field, that being the basis upon which his bids were made. Inasmuch as no particular effort was made to get this contract other than to quote a price, it is very evident that all who have oil to sell do not regard the prospect of cheaper oil in the future with any degree of confidence.

The price this year is 12 cents above contract price of a year ago.

JAPS INVESTIGATING OIL.

Two Japanese naval officers and an officer of a leading Japanese steamship company have been in Kern County looking into the oil production of Kern County, and it is supposed that their inquiry is relative to the adoption of California oil as a fuel by the Japanese navy. The Japanese are Yicichi Tomayshu and Naval Expert Sanmatsu Kanaya of the Japanese navy and Yoshie Nakaya, of Nutsio and Company, the Japanese steamship firm. They have been making a quiet investigation of the local situation for some time but refuse to talk for publication.

DR. EDELEANU'S NEW PROCESS FOR REFINING PETROLEUM.

By J. C. Christensen, B. S.

Dr. L. Edeleanu, a French chemist, has patented a process for refining petroleum and its distillates that has excited considerable interest.

The process is a radical departure from the time-honored acid process, in that the separation of impurities by chemical means is entirely discarded and their removal simply by physical solution is attempted. The new method is based on the fact that the heavy, viscous oils and the resins are more soluble in liquid sulphur dioxide than the lighter oils; thus the process is simply one of fractional solution. Many other solvents, designed to accomplish the same result, such as fusel oil, amyl alcohol, acetone, phenol, etc., have been proposed by other chemists, and indeed have been used in the laboratory for separating the oils for further investigation, but have never been considered of commercial value. Moreover, none are as efficient, cheap, or as easily applied as liquid sulphur dioxide.

A word concerning the characteristics of liquid sulphur dioxide may not here be amiss. Ordinary sulphur dioxide gas (obtained from burning sulphur) may be liquefied at atmospheric pressure by cooling it to 8 degrees below zero, Centigrade; or by subjecting the gas to a pressure of about 120 pounds per square inch it may be liquefied at a temperature as high as 155 degrees C. Liquid sulphur dioxide is a colorless, transparent, mobile fluid, specific gravity 1.49; boils at 8 degrees C., and evaporates rapidly when exposed to the air.

According to Dr. Edeleanu's patent, the cooled oil is mixed with liquid sulphur dioxide in either open or closed vessels. The impurities (i. e., oils of high carbon content) dissolve in the liquid sulphur dioxide, while the lighter insoluble oils remain unacted upon. The solution of heavy oil in the sulphur dioxide separates from the lighter oil on account of its greater density, just as water separates from oil. The purified light oil is thus obtained.

The advantages claimed for this process are:

1. Ability to successfully refine such kerosenes as those obtained from Californian, Roumanian, Russian, and Galician petroleum.
2. The recovery of all of the sulphur dioxide used.
3. The recovery of the heavy oils in a form suitable for direct marketing.
4. The absence of any disagreeable waste products.

No claim, so far as can be learned, is made that the process is cheaper than that now in use, or that it will be commercially practicable, but this is implied in the application for a patent.

The fact that liquid sulphur dioxide can be manufactured on a large scale at an exceedingly low cost (about $4.00 per ton), together with the other interesting features of the process, led to a somewhat extended investigation of this method of refining, as applied to California kerosene. Coal oil distillate was treated with various amounts of liquid sulphur dioxide, and the kerosene thus refined tested by burning in a lamp. The best result that could be obtained was secured by using three times as much sulphur dioxide as there was oil, and even then the kerosene was hardly fit for domestic trade, though somewhat better than "export oil." No further improvement could be secured by using more liquid sulphur dioxide, for all of the heavy oils had been extracted, leaving oil insoluble in sulphur dioxide.

The mixture of "heavy oil" and liquid sulphur dioxide resulting from the above treatment was most interesting. By simply allowing the sulphur dioxide to evaporate in the air, a heavy oil was left, usually yellow in color, perfectly clear, and closely resembling ordinary store or gas oil. No "sludge" or sulphonic acids were formed, nor was any evidence of chemical action apparent.

The maximum amount of heavy oil obtainable from the coal oil distillate was about 22 per cent. It is interesting to note that this is almost identical with the percentage of impurity removed by sulphuric acid in the ordinary process of refining. The impurities removed by the liquid sulphur dioxide must be quite different from those removed by sulphuric acid, since the refined oils are quite different. Furthermore, when the refined oil was tested with sulphuric acid, a loss of about 9 per cent took place, again showing that the impurities removed by acid differ from those removed by sulphur dioxide.

A cursory investigation of the "heavy oils" seems to indicate that they are chiefly butyl-benzenes or similar compounds.

In practice, all of the sulphur dioxide could be readily recovered by placing the solution of heavy oil in a vacuum; indeed, by proper mechanical means, the whole process could be automatically carried out, in much the same manner as ice is made by the use of liquid sulphur dioxide or ammonia.

The results may be summarized as follows:

1. A good burning oil cannot be made from California petroleum by this method.
2. The method is very costly.
3. The sulphur dioxide could be easily and completely recovered.
4. No sludge is made.
5. A salable oil is obtained in place of almost worthless sludge.
6. About 22 per cent of the oil is removed as impurity—about the same as in the present process of refining.
7. The impurities removed by liquid sulphur dioxide are unlike those removed by sulphuric acid.

STATE PRODUCTION.

The following table gives the production of California by fields for the first quarter of the present year. No record of increase or decrease has been received from the smaller fields during the past few months.

Field	Jan.--Bbls.	Feb.--Bbls.	Mar.--Bbls.
Coalinga, East	628,300	631,300	689,520
Coalinga, West	403,565	464,533	490,446
Coalinga, Total	1,031,865	1,095,833	1,179,966
Kern River	1,190,000	1,079,000	1,130,000
McKittrick	390,000	400,000	450,000
Sunset	99,000	87,000	74,000
Midway	85,000	83,000	93,000
Santa Barbara	700,000	700,000	700,000
Ventura County	24,000	24,000	24,000
Summerland	6,000	6,000	6,000
Los Angeles	35,000	35,000	35,000
Salt Lake	240,000	240,000	240,000
Fullerton	320,000	320,000	320,000
Whittier	60,000	60,000	60,000
Total	4,180,865	4,129,833	4,311,966

Following is the Agency report for the Coalinga field for April, paralleled with the previous month:

	March	April
Drilling	113	116
Suspended	27	23
Suspended Producing	67	59
Active Producing	431	446
New Rigs	47	46
March Storage	327,280 Barrels	
April Storage	356,000 Barrels	
March Shipments	1,090,415 Barrels	
April Shipments	1,244,397 Barrels	
March Production	1,179,966 Barrels	
April Production	1,273,117 Barrels	

The Agency officials report that the companies are signing the new contract and agreement promptly. The following have returned their signed documents: St. Paul-Fresno, Pleasant Valley Farm Co., Esperanza Oil and Gas Co., Coalinga Four, Ward, Seneca, Ozark, Mercantile Crude, Circle, Netherlands, Queen and New Era. The following companies meet this week and will ratify the agreement: Coalinga Western, Angelus, Euclid, Premier, B. & B., Merengo, Traders, Fresno-San Francisco, Coalinga Petroleum, Norse Call, Pilot, Claremont, Silver Tip, New San Francisco Crude. The St. Elmo is the name of a new company which has joined. It is a consolidation of the Home, section 14, 20-14 and the old East Puente property. The Home was an agency member while the East Puente was undeveloped.

Reported by

Special Field Representatives

of the

California Derrick

PALMER GUSHER BREAKS LOOSE.

The breaking out of the great Palmer well in Cat Canyon, Santa Maria, after being shut in for some two weeks while the great sump holes and tanks were being emptied, again draws attention to that great wonder of California. So big is this gusher that the Eastern oil man's mind seems incapable of grasping it. The well was capped by an enormous block of solid cement eight feet in height, placed right over the top of the pipe. The pressure upon this was reckoned at some 400 pounds to the inch when a "Times" reporter visited the property on Thursday.

The well broke loose on Friday evening, according to the dispatches. That it should have lifted the huge block seems incredible. It was anticipated on Thursday that this would be removed in a day or two and preparations were then on for that event, which was looked forward to with anticipation all over the vast field. Quite a few in the older district and in town were keeping posted with a view to going in automobiles eighteen to tenty miles to see it start again. It seems probable that an attempt was made to let the well out partly and it passed entirely beyond control.—"Los Angeles Times."

COALINGA.

With the interest that men of money, many of them well known to the oil fields of many States, are taking in this field prompts us at this time to give a resume of the field as a whole, only that it may recall some of the ventures made in the days when so many termed it "wild-catting" when oil men ventured into new territory.

What is commonly called the "East Side Field" was the first to develop oil in quantities that made the situation inviting. The Home Oil Company, on Section 20, T 19 S, R 15 E, was the first to be brought in, that was about 1896. The wells are still producing. About 1903 the California Oilfields, Limited, a company organized by the Balfour-Guthrie Company, a strong English financial house, which has made a great success of the oil business, is the largest single producer in this field, producing over 12,000 barrels per day. It has a town of its own that cost about $200,000; a postoffice, "Balfour"; some of the best shops in the State for the making and repair of oil well tools; a model camp in every way. The Standard Oil Company has a large pumping station on Section 36, T 19 S, R 15 E, with a capacity of moving 20,000 barrels per day to its large refinery at Point Richmond, on San Francisco Bay. The British Consolidated Oil Corporation, Limited, has one producing well on Section 26-19-15 and are drilling on well No. 2. The Kern Trading and Oil Company (Southern Pacific Company) is developing Sections 3, 11 and 35, 19 15. The Sauer Dough Oil Company, on Section 22-19-15, has paid over $250,000 in dividends since 1900. These are among the best of the companies on the East Side.

On the West Side, among the most active may be named the following: The Confidence Oil Co., organized by Fresno people, received a lease from the Southern Pacific Company, known as "Lease G-1," dated June 18, 1900, being the E ½ of the W ½ of Section 31-19-15, M D B & M; this was the first lease issued by the Southern Pacific Company, in the Coalinga field. The county records disclose but twelve oil leases made by the Southern Pacific Company. The company, realizing the great value of liquid fuel, has refused to sell or lease any of its lands for mineral oil in this field. This was the real start of the oil development of the West Side field. The Coalinga Pacific Oil & Gas Company, W. W. Parlin, manager, operating under a Southern Pacific lease, on forty acres in the northwest quarter of Section 7-20-15, developed well No. 1 in the latter part of 1904. The company delivered to the Associated Oil Company on contract from November 1, 1904, to January 31, 1908, 520,452.43 barrels of oil, which at the present price for fuel oil at the well, 63 cents per barrel, means $327,884.76. The management states that well No. 1 contributed five-sixths of this amount. The Section Seven Oil Company's well No. 1, on Section 7-20-15, drilled in the latter part of 1905, came in 3,400 barrels per day; Robert Hays Smith, manager. This well is estimated to have delivered about 1,500,000 barrels of oil up to January 1, 1909; the well is now making about 200 barrels per day. The Zier Oil Company, Section 1-20-14, commenced to operate in 1902. This lease is higher up on the croppings and the wells are about 700 feet deep on an average, the oil being about 14 gravity. These wells yielded about 40 to 60 barrels per day each. With modern methods, Andy Ferguson, manager, has doubled the production, the eight wells now making an average of 10,000 barrels per month; the company has determined to drill up the lease. Just below this property is the Ward Oil Company, on the north half of the northwest quarter, Section 12-20 14, James Ward, of Fresno, manager; this property commenced development work in 1907; in fourteen months the company paid its first dividend, the result of energetic action and application of modern ideas; this property is delivering 11,000 barrels of oil per month from four wells, is a little lower on the formation than the Zier, consequently larger wells. The Penna. Mining, Developing & Operating Company (now controlled by the British Consolidated Oil Corporation, Limited, W. Sutton, of London, England, field manager), on Section 12-20-14, brought in well No. 1 in February, 1905. We are informed by a former field manager that this well contributed nine-tenths of the production of this lease, which reached the magnificent figure of 655,000 barrels of oil, or at present prices earned the company $412,650.00. The Wabash Oil Company, on Section 24-20-14, with fourteen wells, is a dividend payer, production about 32,000 barrels per month. The Traders' Oil Company, J. Benson Wrenn, manager, Section 24-20-14, organized by Bakersfield and Los Angeles oil men, a close corporation, commenced operations in 1907, now one of the dividend payers. The Southern Pacific Company, handling its oil lands under the Kern Trading and Oil Company, is very active in this field, where it owns property worth many millions of dollars on the West Side alone It is developing on Section 31 19-15, on Section 13-20-14, on Section 23-20-14, on Section 25-20-14. The Associated Oil Company, on Section 36 20 14, has nine wells drilling, eleven producing wells, and three new rigs ready for the drillers, and has several locations graded for other rigs The American Petroleum Company, owning and operating on Sections 18 and 19, 20-15, has also land in Sections 6-20 15 and 32-19-15, in which Ed Doheney, a heavy operator in oil, and D. O. Mills, banker of New York City, are interested. At this writing it has six wells producing on the west line of Section 30-20-15, all flowing, making about 4,500 barrels per day, or 135,000 barrels per month, which represents, at present prices under the present contract, 63 cents per barrel at the well, a neat sum of $85,050.00 per month; this land sold at $2,000 per acre; looks like it is worth the money. It is running ten strings of tools, commencing operations in 1908. The Nevada Petroleum Company, on Section 30-20-15, in which Geo. Wingfield, of Goldfield, and United States Senator Nixon, of Nevada, are largely interested, is pushing development work. The Lucile Oil Company, on Section 6-21-15, commenced operations in 1906, a few oil boys, without means, but plenty of nerve, perseverance and knowledge of the oil business at the drilling end, organized themselves and went to work. Against every obstacle known to the oil man they fought a successful fight, as pioneers of the south end of the West Side field, for it was the indomitable energy of these few men that started the development of this end of the field; it was their work and success that contributed towards bringing in the territory between them and the Wabash Oil Company, on the northeast quarter of Section 24-20-14, where today are 76 producing wells, 18 wells drilling, 14 new rigs built ready for the driller; their success has made Section 6-21-15 one of the best known sections, and has set a mark for all who venture out in the "front" after new territory. There are now twelve companies drilling on Section 6-21-15. No well drilled on the West Side field, east of the outcroppings that has been carried into the oil sands, has failed to be a producer. The field has made wonderful growth in the past two years, and the future is promising of still greater results.

Southern Extension.

In the opinion of practical oil men the oil belt extends south through Kings county into Kern county.

To the south of town for a distance of over 35 miles men are drilling for oil with very promising indications of two of the wells coming in very soon. The Blair Oil Company, on Section 14-21-15, is 1,000 feet deep with 12½-inch casing. The Azores Oil Company, on southwest quarter of 26-21-15, are drilling. The People's Associated Oil Company is drilling on Section 32-21-15, are now about 1,400 feet deep with 12½-inch casing. The Golden Crest Oil Company, on Section 12-22-15, is

1,560 feet deep with 8¼-inch casing with a good showing of oil sand; G. W. Warner is superintendent, a man of large experience in the Canadian oil fields. The Robertson Oil Company, on Section 6-22-16, has built a substantial rig and will very soon rig up for drilling; G. W. Warner, superintendent. G. W. Warner and others are building a rig on Section 20-22-16 and will soon be drilling. Smith and Bryner, young pioneers o fthe West soon be drilling. Smith and Bryner, young pioneers of the West acres, on which they are now drilling, the rig is on Section 33-22-16; oil seepages all along the croppings back of their lands showing that oil is there. The El Cerrito Oil Company, on Section 14-23-17, Art Anderson manager, is about 3,300 feet deep with a good showing of oil sand. The Express Oil Company, on Section 22-23-17, has a substantial rig built and will soon be drilling; A. M. Anderson is manager. The Uno Oil Company is moving in material on Section 26-23-17, and will soon erect a rig for drilling. The Pluto Oil Company, Section 19-25-19, is 400 feet deep with 12½-inch casing; has completed a good water well. Operations are extending down ahead about nine miles, to and into what is known as the "Lost Hills." With the coming in of the El Cerrito and the Golden Crest wells there will be a wonderful amount of development work through this belt from Coalinga to the Lost Hills, a distance of about 61 miles.

Large Surplus.

The great army of consumers of fuel oil, and those who would like to use liquid fuel, are clamoring for a large surplus of oil above the ground, as a substantial guarantee that delivery can be made at all times and under all conditions of trade, which they are justly entitled to warrant them in making the necessary change from coal to oil.

D. O. Mills, the multi-millionaire banker of New York City, paid this field a visit lately, coming in a special train; he is with Ed Doheney in the American Petroleum Company, and in the Nevada Petroleum Company. This field is attracting the men of influence in the world of finance, from the fact that Coalinga is recognized not only as an oil center, but from the further fact that after careful study of the character of the underlying oil sands, it appears that the supply of oil underlying a vast territory and that years of development will be necessary to exhaust this supply. There are wells at Newhall, Cal., that have been producing over thirty years. It is possible that the various sands in this field will take a number of years to exhaust. The first wells drilled in this field, about twelve or fourteen years ago, are still producing. The American Petroleum Company, on Section 30-20-15, is proof that the territory 2,000 feet deep and over will be the most prolific. The Coalinga Mohawk Oil Company well No. 1 is expected to prove the 4,000-foot territory, on the extreme east lines of the East Side field. The Golden Crest Oil Company, Section 12-22-15, well No. 1, and the El Cerrito Oil Company, Section 14-23-17, well No. 1, are expected to open up a vast territory in the south field.

The Cheney Bros. are erecting a two-story brick building, 75 x 150 feet, on Sixth street, at the corner of E street. The ground floor will be occupied by a store room 18 x 36; the balance of the ground floor will be occupied by the livery business of the Cheney Bros., who will improve the service to the requirements of our city. The second floor will be fitted up for offices and residence suites.

A free rural delivery service has been established covering a part of the oil fields. One carrier is now on, who will serve a limited number of camps. As the length of the route covers 23½ miles, the carrier cannot call at each camp, but must depend upon mail boxes on the roadside in most cases. This service will be appreciated by a large number of the smaller leases.

The Marian Oil Company takes its place with the West Side. Having acquired from L. P. St. Clair 32 acres in the southeast quarter of the northwest quarter of Section 6-21-15, organized by Kenneth Donnellen, member of the San Francisco Stock Board, who was one of the first stock brokers in Goldfield and Tonopah.

The Shawmut Oil Company (Jno. A. Bunting), Section 12-20-14, has material for rig No. 9, which will offset the northeast well of the B & B Oil Company. Material has been ordered for four more rigs to be delivered one month apart, as Mr. Bunting will fully develop his property on this section.

The Arizona Petroleum Company makes its entry into this field, having secured the twenty acres in the southeast quarter of Section 14-20-14, formerly known as the "East Puente." The company will commence active operations at once.

The Graham well, No. 2, on Section 6-21-15, has had the rotary rig removed and will finish the well with the standard rig; well No. 1 has had 6¼-inch casing pulled; the same will be replaced as soon as the bottom of the well is cleaned.

The monthly production of this field today will not fall short of 1,230,000 barrels, which represents, at 63 cents at the well, $774,900 per month from the earth's treasury in this sometimes-called barren waste.

The Coalinga Aladdin Oil Company, Section 6-21-15, is over 1,250 feet in well No. 1, with 12½-inch casing, which has been landed, and now has in the 10-inch string.

The Azores Oil Company, Section 26-21-15, is drilling on the southwest quarter; well No. 1 is 800 feet deep with 12½-inch casing.

The Shreeves Oil Company, Section 6-21-15, has resumed operations and will now try and shut off the water in well No. 1.

The Coalinga Red Top Oil Company, Section 6-21-15, is 700 feet deep with 12½-inch casing.

The Imperial Oil Company, Section 2-19-15, is in the pay sand at 2,950 feet in well No. 2.

The Porter Oil Company, Section 26-19-15, has incorporated to operate a forty-acre lease.

The Amy Oil Company, Section 6-21-15, will shut off the water at 2,350 feet.

The St. Francis Oil Company, Section 6-21-15, has resumed operations.

The Nevada Petroleum Company, Section 30-20-15, is running three strings of tools.

SUNSET, MIDWAY, McKITTRICK.

The La Blanc Company's well at Sunset is down 1,420 feet in what appears to be the "shell." Oil scum floats in the sump with every pumpful of muck raised to the surface. Rapid progress is being made since the installation of the new equipment.

The Sheriff Kelly Company has its hole down about 800 feet, the casing having been landed at 750 feet. The drilling has been very difficult for the past six weeks, owing to hard formation. The well is in the center of Section 17, 12-23, Sunset.

The Loma Vista has just landed on the shell at a depth of 1,220 feet in its second well. The first well is meeting the expectation of its owners.

Paraffine No. 2 is reported to be producing at the rate of better than 800 barrels per day, and it is stated that it has averaged over 700 barrels since first brought in. The third well is down 725 feet and the work of restoring well No. 1, which was injured by a cave, is going ahead nicely.

At Midway, the Croesus has started work on its No. 6 well, although the last well drilled is not yet on the pump. The other four are said to be producing something over 400 barrels per day, an average of 100 barrels each.

Upwards of 50 feet of sand has been penetrated in the Muscatine well, which struck the formation at 1,400 feet. Considerable difficulty has been experienced in deepening the hole, owing to the heaving of the formation.

Section 25, Midway, has just brought in its fifth well, which is the best one thus far on the property, measuring up about 400 barrels per day. Two additional wells are being drilled.

A new pipe line is to be laid from Templor to McKittrick to connect with the line already operating to the latter field. H. B. Guthrey and associates are at the head of the enterprise, which is designed primarily to handle the present production of the Templor Ranch Oil Company, but which will be of sufficient capacity to handle a large amount of other production. The pipe has already been purchased from the National Supply Company. It is of standard size and it is expected that the line will be installed within sixty days, as work has already been started. This line will be a stimulant for new operations in this section, as the district has hitherto not enjoyed facilities for transportation. The cost of the line will be around $50,000.

The Templor Ranch Company is redrilling well No. 1, which will be completed in a very few days, if such is not already the case at the time of going to press. The company is engaged in drilling well No. 7, and when this comes in it is expected that a production of from 500 to 600 barrels a day will be made. At the present time the wells are capped awaiting the installation of the pipe line.

The Standard has reached tar sand at 867 feet on Section 28, and the well is now down about 1,000 feet.

The Union Oil Company has brought in well No. 3 on the Webster lease, and it is reported to be good for better than 500 barrels. No. 1 is doing close to 200 barrels.

The new Johnson well on Section 7 has penetrated the main oil sand of the Sunset District, and is bubbling over the top in small quantities of gas and oil.

The Lady Washington No. 2, which struck the tar sand a couple of weeks ago, is making a few barrels of oil daily. The well will be finished within the next two or three weeks, and estimates of its capacity vary from 250 to 1,000 barrels daily. The well is down 1,740 feet.

The Union Oil Company is reported to have secured a lease on Section 28-31-23, northwest of the Standard pumping station, at Midway. The property is owned by location by H. C. Stratton. Drilling operations are to be started at once to secure patent.

The Monte Cristo is drilling the entire north line of Section 1, Sunset, and as soon as the corner is reached the east line will be drilled. Nine strings of tools are now working. The company recently authorized a bond issue of $300,000 to clean up the indebtedness and to continue the extensive work of development. It is also announced that a dividend will likely be paid within the next two months.

DRILLING WEST OF LOS ANGELES.

The Associated is down some 1,500 feet on the West Coast's Wolfskill No. 24, close to the gusher, No. 23, and has just replaced the rotary by the cable. The Wolfskill No. 1 is still unfinished Large quantities of cement have been pumped in but no commercial oil has been yielded. Work was started here a year ago. The gusher is still flowing, while No. 3's gas is still used for the boilers.

Southwest from the Wolfskill toward the Greenlee property the Associated is drilling No. 1 on the Gillis lease. At 1,600 odd feet it has just substituted the cable for the rotary.

The Amalgamated has two holes in course of sinking on the Rodeo, one down 900 and the other 1,500. One rotary is operated at present. No new ones are being started now. The Greenlee work is hung up with a fishing job.

The Union's Consolidated Petroleum No. 2 is down close to 1,000 feet with a cable string, the rotary having been abandoned at a very slight depth owing to the formation.

The rig for McDor No. 2, that was moved after a first mechanical failure, is just completed. The No. 1 on the same property is down 1,400 feet. The Grador No. 1 has reached 1,970 feet.

The Union has started development on its new Westgate lease as required by contract.

DOUBLES DIVIDEND.

Stockholders of the Claremont, one of the Union's subsidiaries, have received a circular notifying them that after June 28th, the monthly dividend will be two cents instead of one cent.

The Claremont's hole on the Coalinga Section 4 is down 3,600 feet with work still in progress.

CLOVIS TO BE EXPLOITED.

Articles of incorporation have been filed of the Clovis Oil Company with $100,000 authorized stock in 100,000 shares and $25,000 subscribed in lots of $5,000 each by C. E. Boyd of Hanford, S. L. Eversoll of Clovis and T. W. Pond, A. G. Ehmann and I. S. Knight of Fresno. The company's place of business will be at Fresno.

The work of drilling near Clovis will soon be commenced. Lumber for the derrick and other necessary buildings has been shipped out and as soon as the structures are in place the work of drilling into the ground will be begun.

About one year ago, it will be remembered, oil was found in the Shaffner water well, located about two and a half miles northeast of Clovis. This oil was found floating on the water and several gallons were taken out and tested. The find created a temporary excitement, which eventually was forgotten, to be revived hy the filing of the incorporation articles as stated and the renewal of active operations.

WHITTIER.

The oil fields of Whittier cover an area of one by two miles wide, and contain 125 wells, approximately, and the monthly output 90,000 barrels. The field is continuous, and don't diminish to any extent. None in storage; all sold as fast as produced.

The Home Oil Company are pumping fourteen wells. They have been pumping with air compressors to exhaust the water. The water is about all out, and the well will be made deeper. The field is growing larger all the time.

The Whittier-Fillmore Oil Co., of Whittier, Cal., have one well down 2,300 feet pumping right along. They are drilling another one with very favorable prospects.

S. W. & B. DECLARES DIVIDEND.

At a meeting of the S. W. & B. Oil Company held in Bakersfield Wednesday a monthly dividend of one cent a share was declared. There are 380,000 shares of stock outstanding. The dividend is the fourth paid by the company. The first was a share for share stock dividend. A four-cent dividend was declared last November and a two-cent dividend in April. The directors now find themselves able to pay a monthly dividend. To date $26,000 has been paid in dividends by this company.

GUSHER SOAKS CREW.

The Monte Cristo struck another gusher on section 1 at Maricopa Sunday. When working on some frozen tools on well number 5 the oil suddenly rose and fell in a perfect deluge from the top of three lengths of casing on to the men below, nearly drowning them. The company sent all of the crew into Maricopa and purchased entire new outfits of clothing.

LIGHT OIL IN MIDWAY.

More than an ordinary amount of excitement has been caused in the Midway field this week by the bringing in of a 22 gravity well on section 31, 31-23 by L. A. Crandall, who is in charge of operations for Captain Mattison and others. The drill went into the sand at 1800 feet. The water had been shut off and the eight-inch casing was landed on a hard flinty shell about seven feet thick. The well will be finished with six-inch pipe. The strike was unexpected at the time and operations are delayed until the arrival of casing. At last reports there is a big gas pressure and the light oil is standing 1,000 feet in the hole. The strike has caused renewed activity in that section of the Midway. The Grahams, Frank and Emmett, and J. W. Leland are commencing operations on section 26, not far distant.

TO AFFILIATE WITH MINING CONGRESS.

The Sierra Madre Club of Los Angeles, a social organization designed to represent the mining and oil producing districts of the Southwest, will affiliate with the American Mining Congress and it is expected that one of the strongest institutions in the West will result. The step was decided upon last week after the members and directors had listened to proposals from Mr. H. L. Thompson, special representative of the congress. By the arrangement sanctioned by the directors the initiation fee to the local club will cover initiation to the National organization and annual dues will be remitted by the local institution. The club has just secured central quarters and estimates and plans for alterations and furnishings are being made. It includes in its membership many of the leading mining men of the Southwest with an honorary first vice-president list embracing all Governors of Western States, the Lieutenant-Governor of British Columbia, the Governor of the Territory of Alaska, the President of the Mexican Republic and the Governor of the northern portion of Lower California. Mr. Seeley W. Mudd, the well known engineer, is president; Mr. J. Ross Clark, vice-president and Mr. Sidney Norman, secretary. The secretary will be glad to receive applications from outside mining and oil men in this district.

RECENT PATENTS

Attachment for well-drilling derricks, Newton W. Jones, Waterville, Wash., 914,579.

Walking-beam, Hezekiah Shannon, Cyclone, Pa., 914,608.

Ejector for oil wells, Jas. W. Plimpton, Oil City, Pa., assignor to Charles E. Cooper, same place, 916,366.

Oil saver, Edward L. Mills, Los Angeles, Cal., 916,573.

Pump, Sherman Perry, Orcutt, Cal., 916,777.

Pipe-coupling, Edw. P. Nole, Belle Vernon, Pa., 917,111.

Bull-wheel for well-rigs, Walton B. Claypole, Kittanning, Pa., 917,412.

Line-cutter, James J. Davin, Washington, Pa., 917,555.

Still for distilling crude bituminous products, Horace W. Ash, Cambridge, Mass., assignor to Warren Bros. Co., Charleston, W. Va., 917,702.

SANTA FE BUYS LAND.

The Bakersfield Californian says that it is reported on the best of authority that the Santa Fe has purchased from the Western Minerals Company (Kern County Land Company) all their holdings in the neighborhood of Sunset, including all of section 17, a part of section 18, and hundreds of acres farther back. As yet no oil has ever been found on any of this land.

RUSSIAN MARKETS.

The total production of crude oil from the fields of Baku for the month of March, old style, was a large one, amounting to 40,786,551 poods. The Balakhani field contributed 31,387,747 poods, and the Bibi-Eybat field 9,398,804 poods. There was a fountain production of 411,157 poods.

The Prince of Chilkow more than a year ago acquired from the Russian Government large fields in the District of Fergan. This ground has been worked, and recently a well was struck which proved to be a rich one. The boring was carried to a depth of 170 meters, resulting in a daily production of about 3,000 poods of crude oil. It is reported from Baku that Messrs. Nobel Brothers have sent several engineers into the District of Fergan, and it is stated that Messrs. Nobel intend to acquire grounds in that district.

The pipe line from Baku to Batoum has ceased working since the middle of April, and repairs are meantime being effected. From one to two months is necessary to complete these repairs, and meantime all the oil is carried by tank car from Baku to Batoum.

The quotations are: Crude oil, 23 copecks; residuals, 22-22¼ copecks, and kerosene, 31¾-32 copecks per pood free on rail Baku for prompt delivery.

MONO LAKE BASIN AS AN OIL FIELD.

By Hon. W. H. Virden.

The following letter was written a short time since by Judge W. H. Virden, of Bridgeport, Cal., to a relative of his, in answer to inquiries about the Mono Lake oil prospects.

Knowing that the interest in the oil district is daily increasing, we have obtained his permission to publish it, says the Bridgeport "Chronicle."

The judge's carefulness, reliability, and good judgment are well known to the people of this county and give weight to his opinions.

"Bridgeport, Mono County, Cal.

"My dear Charles:

"In answer to your inquiries as to 'what are the indications of and on what do you base your belief in the Mono Lake Basin proving to be an oil field,' I will say: I am not an oil expert, only a close observer of what I see and understand.

"For many years I have ridden around Mono Lake, hunted ducks on its shores, sailed on its treacherous waves, and bathed in its invigorating, refreshing waters, without a thought of its being the center of a great oil basin.

"I was looking and searching for the precious metals, gold and silver, and gave but little attention to any other mineral production.

"While thus occupied, I had observed many curious mineral and other features about the lake and its water. Among these was a peculiarly refreshing and enjoyable feeling imparted by its waters when bathing in it.

"The fact that its highly mineralized waters possessed healing qualities of an unusual character, quickly overcoming the soreness and stiffness of foundered horses, healing quickly the sore necks, shoulders, and backs of team and pack animals, in fact, any kind of soreness or injury, was well known.

"When rowing over the lake, the constant rise of bubbles from the bottom attracted my attention.

"In the summer, whenever a strong gale of wind blew from the southwest, the northeastern margin of the lake exhibited a roll of pure white foam or bubbles, looking just like soap bubbles, from one to three feet high.

"At certain seasons of the year, the waters produced millions of a small black fly, whose larva resembled a fat, oily worm, which furnished, when mixed with ground and roasted pine nuts, a very large portion of the supply of winter's food for the Indians living in that vicinity.

"Out in the lake, at various distances from the shores, cones of calcareous tufa, or water-formed stone, rise to the surface, from which pour springs of pure, fresh water. These cones are constantly building up with the flow of water, and others are being created whenever a new spring forces its way up in the bottom of the lake.

"By evaporating the lake water, concentrations of large quantities of crystallized minerals were obtained, an analysis of which revealed magnesium, potassium, calcium, silica, sodium, sulphuric acid, chlorine, boracic and carbonic acids.

"The lake water taken in small doses was known to cure dyspepsia and other diseases.

"I had heard it asserted that petroleum had been found on one of the islands, but gave the matter little credence.

"That was about the extent of my observations until Caesar Thiverege, a Frenchman, placed a band of goats on Paoha Island, and announced that he had found a petroleum spring on it.

"Persons who claimed to know the nature of oil lands had this oil tested and announced it to be an excellent quality of crude petroleum paraffine oil and declared their belief that Mono Basin was an oil field.

"This caused the location of a number of oil claims on the islands and shores of the lake. For the first time then I began to read and study the nature and character of oil lands and look and search for the rocks, stands, and other usual surface indications of rock oil.

"I had previously read with much interest the United States Geological survey of the Mono Valley Basin by Professor J. W. Powell, in which I found but a bare mention of a spring on Paoha Island that smelled like petroleum. But I found that his report (made by Israel C. Russell) dwelled almost exclusively upon the dimensions and character of the lake during the glacial and quarternary periods, without any mention of the mineral possibilities of the valley or mountains surrounding it.

"I also noticed that the earlier geological reports of the western Pacific slope that I had read made no mention of its petroleum possibilities, now admitted to be so vast and valuable.

"Powell's report of the Mono Basin even claimed a number of volcanic craters to exist on Paoha Island, and it was asserted that the petroleum spring discovered by Thiverege was in one of those craters.

"My observation failed to sustain that view. All the margins of the lake, the older terraces, and the more recent beaches failed to show the volcanic rocks and scoria that have accompanied such conditions. None of the black obsidian that covers the craters on the south of the lake is to be found in the northern beaches or on or around the larger island.

"The exposed rocks of the basin are principally calcareous, magnesia and tufa formed by the waters; and beds of shale with layers of clay and sand intervening.

"I therefore soon concluded that the geologists, guided by the volcanic craters stretching away southward from the lake, had reached a wrong conclusion in regard to the Mono Basin lying north of these craters, an extent of country 15 to 20 miles in width by nearly 40 miles in length, and that this great basin had never been seriously disturbed by the eruptions to the southward.

"The bed of the lake is comparatively smooth, generally shallow around its margins, and its greatest depth only 160 feet.

"Those conclusions have been gradually strengthened by the discoveries in the oil wells, recently sunk, one on the large island and the other on the north shore of the lake. The rocks, beds of shale, clay, and sand in the well on the island have proved to be well stratified and of a very favorable and regular formation for the discovery of reservoirs of petroleum oil. That well is now down 1,800 feet. The well on the mainland is not so deep, but so far as it is down shows the same regular stratified character of rocks, beds of shale, clay, and layers of sand, without the least show of any recent volcanic disturbances.

"Now as to oil indication. It is a historical fact that many of the first discoveries of rock oil the world over were made through the finding of springs and seepages of oil exuding from crevices in the rock. Of these, the springs of Zante, the fountains of Hit, the Sicilian oil used in lamps, the petroleum springs of China, the oil springs in Oil Creek in Pennsylvania, the springs near Titusville in the same State, and numerous other discoveries to which I could refer you, are historical examples.

"It is also a geological fact that petroleum occurs principally in the rocks of the silurian and the lower half of the tertiary periods, although found to some small extent in nearly all geological formations. Most of the vast accumulations of oil found in the Western Hemisphere have been found in the silurian and devonian rocks, while the most productive in the Eastern Hemisphere are found in the rocks of the eocene and the miocene periods; and in the valley of the Rhone and in Savoy it is found in jurassic limestones. In the United States, it is found in the silurian rocks, in the Trenton limestone, Niagara limestones, devonian black slate, and subcarboniferous sandstones, within the coal measures. On the Pacific slope, principally in rocks of the miocene period.

"It is also well settled that petroleum oil occurs in crevices to a very limited extent, but that such crevices indicate the existence in the earth of large deposits of oil; that such reservoirs lie in deep sand-bar structures like waves, sometimes extending deep in the earth in a regular course for a hundred miles or more, the surface contour of the mountains and country under which they lie showing no indications of their existence.

"The spring on Paoha Island was found by the Frenchman twenty-five years ago. Its flow has been uninterrupted and steady all those years. If it were not a permanent seepage, the evaporation and constant taking of samples of the oil by experimenters would long since have exhausted it. The oil seems to have saturated the adjoining rocks, showing that its flow is quite strong.

"As I have heretofore informed you, the greater part of the oil locations on the island were made by the Great Western Oil and Development Company and the Mono Standard Company, and unfortunately several of these are conflicting claims, over which a suit in the Superior Court is now pending.

"The Great Western Company have a well 1,800 feet in depth. It was reported, and I believe to be true, that at a depth of 350 feet they found oil sands and encountered both oil and gas. Afterwards, at a much greater depth, they claim to have again encountered oil, and exhibited samples of the oil in Bridgeport. They then immediately stopped work, but have never taken up their pipe or abandoned their well, and, on the contrary, have laid in wood and other supplies for future work.

"The Mono Standard Company, I am informed, have a shaft on the island down 90 feet, in which they claim to have a good flow of oil. Two seepages of oil have been reported on the northern shores of the lake, one on the margin of the lake about four miles north of Paoha Island, the other about three miles further to the northeast. The Great Western Company have erected a second derrick and rig on the mainland within a short distance of the first of these seepages, but for reasons of their own have not yet commenced to bore.

"The Standard Company have also erected a derrick within about half a mile of this last plant, and now have a well down over 300 feet, with favorable indications of finding oil. Their statement is, at not to exceed 1,000 to 1,200 feet in depth. In a canyon about 9 miles north of the island, in the hills, a

great mass of conglomerate, which burns, has been discovered. This has undoubtedly constituted the bed of an oil pool in the ages of the past, which has been drained and evaporated.

"The finding of gas in the well on the island is proof that the bubbles constantly rising in the lake are gas, and not air. The vast bed of the lake from which they arise shows the entire bed of the great basin to be of the same stratified formation and that they are created and rise from the same sources.

"The immense white roll of bubbles around the margin, we have noted, are without doubt created by the escaping oil in the lake coming in contact with the alkaline matter it contains, and thus becoming saponified.

"The best oil experts that have visited the great basin all agree that the layers of sand and clay, so far as shown, are genuine oil sands, and that the prospects are good for the discovery of good flowing wells, whenever properly developed.

"If you have an intention to invest, come and see for yourself. As the miners say, 'The float, the croppings, the indications are there.' And I think when you see it you, too, will conclude as I have.

"I may have been somewhat tiresome, and this explanation somewhat long drawn out, but it seemed as if, when once launched in it, the subject could hardly be explained and my reasons correctly given without it.

"Your cousin,

"W. H. VIRDEN."

TO BUILD PIPE LINE TO TIDEWATER.

A pipe line to carry the production of the independent oil producers of Coalinga and the Kern County field to tidewater is to be built by local capitalists. Rights of way have been secured, and all plans have been formulated. The lines are to join at Dudley, a small valley point, and from there proceed to the coast at Port Harford.

S. W. Morsehead, H. H. Welsh, L. P. St. Clair and M. V. McQuigg, officers and directors in the Coalinga and Bakersfield agencies, are financing the project. These men have been working quietly for some time past, and it is understood they plan to begin work as soon as possible.

The question of transportation has become a serious one, and at Coalinga there is much dissatisfaction with existing conditions. It is charged in some quarters that the Associated Oil Company is not living up to its contract. Many of the companies are unable to make deliveries because the Associated is not in a position to handle the increased production.

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HALFMOON BAY.

The American Duchess Oil Company, that has been operating in the Halfmoon Bay oil field for some years, is preparing to drill a number of wells during the coming summer. It has a big machine shop at the property and now has a number of men carefully going over all the machinery equipment and putting it in full repair. The company has largely added to its holdings in the district and reports that three drilling rigs will be put in operation as soon as weather conditions settle.

The Knapp Refinery recently made an offer of $2.70 per barrel for all the high-grade refining oil of a gravity above 47 degrees. This appears to be an unusually high price, when compared with that of fuel oil, but the company reports that the offer has not been accepted, from the fact that a much higher price can be obtained on time contracts as soon as the Ocean Shore Railroad is in operation, which will permit of shipping oil to refineries located on San Francisco Bay.

The company has made recent shipments of oil to some of the biggest refining companies in California, for the purpose of demonstrating to refiners, by actual tests, that Halfmoon Bay produces the most valuable refining oil in this or any other country. High-grade refining oil is always in great demand, especially so in California.

Two oil men from Ohio were recently in this field, also a number of oil men from the southern part of California, negotiating for leases. J. Downey Harvey, president of the Ocean Shore Railroad, and a party of oil men recently inspected the wells of this field and now have under consideration the purchase and operation of one of the producing properties.

Mr. Scholtz and associates have their drilling machinery at Halfmoon Bay and will begin operations on the Savage ranch in a short time. J. E. Kerr, of San Francisco, has been operating in this field for several years and has recently taken leases on over 3,000 acres, and states he will begin active operations about May 1st. He has recently associated with him some prominent oil men of California, who have made an examination of the Halfmoon Bay field and report that there are no better geological conditions to be found anywhere in the State than in this territory, ranging from 2 to 4 miles in width and almost 20 miles long, the new Ocean Shore Railroad running through a good part of it. The Halfmoon Bay field has always been handicapped by lack of transportation, but with the new railroad the people here are preparing for extensive development work.

NEW INCORPORATIONS

The Wrenn Oil Company, Bakersfield, incorporated with a capital stock of $100,000 by J. B. Wrenn, E. W. King, and John Robertson.

The Diablo Oil Company, Fresno, incorporated with a capital stock of $250,000 by L. W. Klein, O. F. Lundelius, and W. H. Harris.

The California King Oil Company, Los Angeles, incorporated with a capital stock of $150,000 by H. B. Guthrey, A. G. Nichols, and J. R. Riggins.

The Manhattan Midway Oil Company, Bakersfield, incorporated with a capital stock of $75,000 by S. E. Vermilyea, E. E. Edmunds, and T. O. Turner.

The Mays Oil Company, San Francisco, incorporated with a capital stock of $500,000 by Thomas Wilkes, J. W. Mays, H. Layer, T. M. Reid, and C. P. Kern.

The Silver Top Oil Company, Coalinga, incorporated with a capital stock of $75,000 by W. R. Guiberson, Z. L. Phelps, Jacob Zwang, C. R. Cutten, and R. Cook.

The Alvarado Oil Company, Los Angeles, incorporated with a capital stock of $300,000 by C. L. Bullard, J. V. and L. H. Mitchell, A. M. F. and V. C. McCullough.

The Searab Oil Company, Los Angeles, incorporated with a capital stock of $100,000 by M. H. Whittier, M. J. Connell, J. M. Kellerman, W. W. Woods, and R. B. Hardacre.

The Madera Oil Mining Company, Fresno, incorporated with a capital stock of $500,000 by R. Roberts, W. B. Thurman, E. M. McCardle, W. C. Maze, and J. G. Roberts.

The Valley Oil Company, Fresno, incorporated with a capital stock of $3,500 by W. H. Worswiek, Jr., H. S. Needham, Fred Huntzicker, F. M. Pool, Jacob Richter, and others.

The Kern River Drillers Oil Company, San Francisco, incorporated with a capital stock of $1,000,000 by J. Reynolds, J. M. Kent, William Sims, L. R. Young, and M. A. Kenny.

The Lillian Oil and Mining Company, Hanford, incorporated with a capital stock of $100,000 by S. Rehoefer, E. E. Bush, F. Richardson, C. E. Chastine, and Jos. Barbeiro.

The Soquel Canyon Oil Company, Los Angeles, incorporated with a capital stock of $20,000 by R. W. Poindexter, T. S. Wadsworth, and M. F. Brack.

The C. C. Harris Oil Company, Los Angeles, incorporated with a capital stock of $300,000 by John D. Bicknell, J. C. F. Hull, H. G. Gates, E. E. Gates, and C. C. Harris.

RECENT PATENTS.

Deep-well pump, Robert C. Purcell, Oakland, Cal., 911,609.

Dumping power, Foriest M. Lee, Geneva, Ind., 912,475.

Double-acting deep-well pump, Jas. Gleason, Green Bay, Wis., 913,123.

Device for gathering rod-wax from an oil-well pump-rod, Delbert L. Heeter, Pittsburg, 913,286.

Producing benzine or its homologues from the petroleum, Eric A. Strake, Berkeley, Cal., 913,780.

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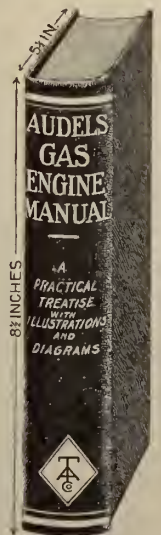

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Associated Bonds, 5s	94.50	100.00
Brookshire		1.50
Caribou	11.25	12.00
Chicago Crude	.08	
Claremont	2.00	2.25
Daisy		.28
Esperanza	1.60	
Four	.28	.30
Fulton	2.00	2.50
Illinois Crude		.26
Junction	.55	.70
Kern	.40	.50
Lucile	9.50	
McKittrick	.18	
Monte Cristo	2.60	2.67½
Nevada County	.30	
Occidental	.20	
Palmer	1.25	
Peerless		7.00
Pinal		10.50
Record	2.40	
S. F. & McKittrick	22.00	
Section 25		22.00
Shawmut		.69
S. W. & B.	.40	.50
State	1.00	
Sterling	3.45	3.50
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Turner		1.00
Union		106.00
Wabash		1.05
Wolverine	.20	
W. K. Oil Co.	2.70	
Western Union		100.00
Cal. Oil & Gas	.60	.70

MONTHLY STATEMENT OF DIVIDENDS PAID BY ACTIVE COMPANIES LISTED ON THE CALIFORNIA STOCK AND OIL EXCHANGE TO APRIL 30, 1909.

Alma	12	Sept.	22, 08	.03	$ 11,400.00	$ 136,800.00
Amal. Oil	21	Apr.	10, 09	1.00	50,000.00	1,050,000.00
Apollo	2	Mar.	20, 05	.01	2,000.00	4,000.00
Assoctd. Oil Co.	4	Mar.	1, 07	1.50	420,000.00	1,522,309.39
Brookshire	36	Apr.	1, 09	.02	10,000.00	372,500.00
Caribou	48	Apr.	15, 09	.25	20,175.75	478,598.49
Chicago Crude	2	Mar.	25, 07	½c	5,000.00	15,000.00
Claremont	47	Apr.	28, 09	.01	4,500.00	219,500.00
Coalinga Pac.	12	Apr.	23, 09	.10	6,500.00	71,500.00
Columbia	25	Apr.	25, 09	.01½	4,996.31	204,848.53
Euclid	26	Apr.	24, 09	.01	1,600.00	28,650.00
Esperanza	18	Apr.	1, 09	.01	3,500.00	85,500.00
Four	63	Apr.	26, 09	.01	3,000.00	198,000.00
Globe	17	Apr.	1, 09	.01	6,000.00	63,000.00
Hanford	30	Jan.	30, 06	2.00	4,000.00	80,000.00
Home	A6	Apr.	20, 09	.02	2,000.00	452,000.00
Homestake	37	Oct.	1, 08	.10	1,000.00	69,250.00
Illinois Crude	26	Apr.	1, 09	.01	2,000.00	58,000.00
Imperial	64	Apr.	6, 09	.60	60,000.00	1,760,000.00
Junction	6	Apr.	1, 09	.01	2,500.00	15,000.00
Kern River	39	Feb.	3, 09	.10	2,000.00	98,000.00
Linda Vista	13	Apr.	5, 09	.01	3,838.50	46,062.00
Lucile	10	Apr.	21, 09	.10	2,670.40	26,704.00
Monte Cristo	53	Aug.	10, 07	.01	5,000.00	265,000.00
Nevada County	3	Oct.	13, 08	.04	10,000.00	40,000.00
Peerless	72	Apr.	20, 09	.06	6,000.00	771,000.00
Piedmont	4	Feb.	5, 09	.01	3,890.00	15,207.30
Pinal		Apr.	5, 09	.15	22,500.00	707,341.00
Pittsburg	10	Nov.	11, 07	.24½	58,800.00	124,800.00
Reed Crude	9	Nov.	08	.06	6,000.00	1,107,000.00
Rice Ranch	8	Aug.	20, 07	.03	9,000.00	69,000.00
Royalty	5	Apr.	10, 09	.04	800.00	3,200.00
S. F. & McKittrick	11	Apr.	1, 09	.30	15,000.00	150,000.00
Sauer Dough	38	Apr.	26, 09	.05	9,975.00	379,050.00
Sovereign	14	Apr.	1, 09	.01	5,000.00	75,000.00
Sterling	19	Mar.	15, 09	.25	62,500.00	559,500.00
Superior	8	Apr.	13, 09	.01	5,000.00	40,000.00
S. W. & B.	2	Apr.	1, 09	.02	7,540.00	22,620.00
Thirty Three	57	Apr.	6, 07	.30	30,000.00	640,000.00
Union	153	Apr.	25, 09	.50	117,711.00	5,009,516.15
United Petroleum	92	Apr.	25, 09	.50	40,375.50	1,734,829.43
Wabash	15	Feb.	15, 09	.01	3,000.00	84,000.00
West Shore	47	Dec.	21, 08	.05	5,000.00	235,000.00
Western Union		Dec.	15, 07	2.00	20,000.00	484,951.00

Total Dividends Paid to Date.....$19,572,237.29

Total dividends paid by the above companies for April, 1909, $413,182.46.

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Vol. 2 San Francisco, Cal., June, 1909 No. 2

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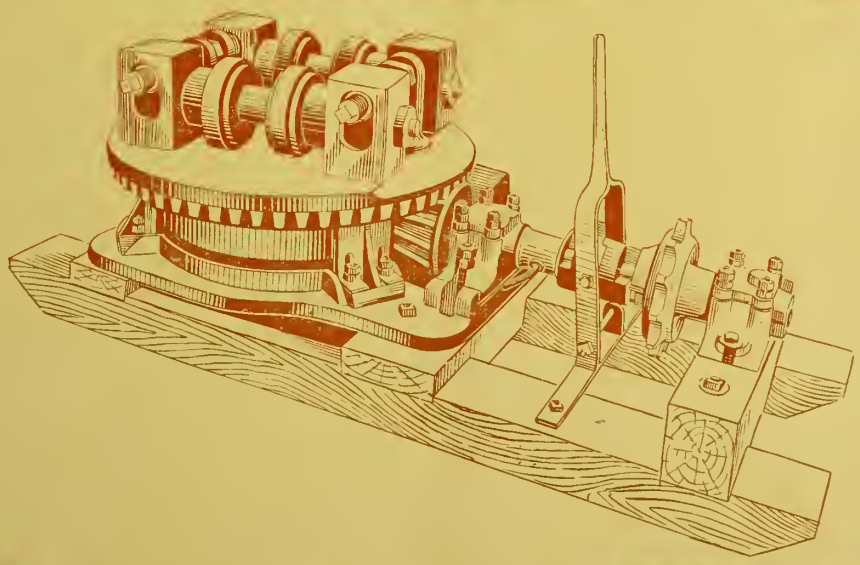

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The Geographical Distribution and Geological Occurrence of Petroleum and Natural Gas: the Physical and Chemical Properties, Production and Refining of Petroleum and Ozokerite; the Characters and Uses, Testing, Transport and Storage of Petroleum Products, and the Legislative Enactments relating thereto, together with a description of the Shale Oil and Allied Industries and a full Bibliography.

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ON THE PROPERTIES OF JAPANESE KEROSENE

By K. KOBAYASHI

I have examined the parallel products distilling between 250°C-275°C. In this case American distillate solidifies at 7°C., and Kubiki distillate at 12°C., but Russian, Borneo, Higashiyama and Nishiyama distillates were not changed at those temperatures. I have also examined the residues from my fractional distillation. In this case the American residuum solidifies at 2°C. and Kubiki at 6°C. From the above results it will be observed that American oil "Chester" contains much solid paraffine, and Kubiki also contains much. I believe that there is some intimate relation between capillary power and the solidifying point of kerosene. To solve this relation clearly a further precise investigation is needed.

Burning Quality Test.

Although distillation test affords an indication of the value of an oil for illuminating purposes, more practical results are obtained by burning the quality test, that is, burning the oil in an ordinary lamp. The same lamps must be used in every test. From the results of many burning tests, I have found out an interesting fact: That only a slight difference in the height of deflector (mantle of burner) of the burner has a great influence on the luminosity. And also the dimension of draughting holes of the burner exerts a great influence. My test lamp consists of an ordinary glass oil reservoir, with a half-inch flat burner, which is now the most widely used in Japan. The following table shows the quantities of each oil consumed for burning after six hours:

	Gms. consumed
American oil	102.5
Russian oil	90.5
Borneo oil	95.5
Higashiyama (A) oil	97.9
Nishiyama (A) oil	87.0
Kubiki (A) oil	92.5

The burning quality test was divided into two portions: First, test for white incrustation; second, test for smoke. The white incrustation of lamp chimneys is due to sulphur compounds contained in oil. Smoke is due to the incomplete combustion of oil—that is, to the percentage of C. contained in petroleum.

Test For White Incrustation.

Though first-class oil from Higashiyama oil does not give so much white incrustation on the chimney but the second-class oil gives a large amount, which diminishes the illuminating power rapidly. All import oils also give a little white incrustation, but it does not affect their luminosity. The formation of the white incrustation depends on the temperature of the room in which the test is conducted.

Test For Smoke

I have examined the production of smoke by changing the deflector of burner on my test lamps. Five kinds of burner deflectors were used. Each deflector differed in height about 1-32 inch. I tested various fractions, especially of Kubiki oil. Below I give the results.

Kubiki oil is not a satisfactory burning oil for the ordinary flat-burner lamp. If the oil contains much of the heavy portion, or tailings, then the oil produces smoke rapidly, which will not be the case with Kubiki oil. I believe there might be a certain difference of composition between Kubiki oil and the other five oils.

Illuminating Power.

Unfortunately I cannot give figures for comparative photometric tests at present, but I have obtained the following results: Generally, Russian, Borneo and Japanese oil do not give as much light as American oil, but there is much less diminution in the illuminating power as the level of the oil in the reservoir diminishes. Borneo oil is of good quality in this respect. "Chester" and Japanese second-class oil show an inferior quality.

Behavior Toward H_2SO_4.

The sulphuric acid test was carried out according to the directions of the Baku section of the Russian Technical Society. I used the sulphuric acid of sp. g. 1.730. 40 parts, by volume of this acid was added to 100 parts of oil in a stoppered glass vessel and shaken for two minutes. Then the acid layer was removed and compared with normal solutions of Bismarck brown. The color of the acid extracted from "Chester" was the darkest. (No. 10 solution.)

I have examined the behavior toward sulphuric acid, 1c. c. of fuming sulphuric acid was added to 20 c. c. of each sample in a test tube from a burette under the same conditions and shaken for fifteen seconds and the oil layer was removed to compare the colors of the oil after a certain time. The results obtained are as follows:

	After 1 Hour	After 24 Hours
"Chester"	Brown	Dark Brown
"Anchor"	Purple	Colorless
"Tank Oil"	Purple	Colorless
"Higashiyama"	Purple	Colorless
"Nishiyama"	Purple	Colorless
"Kubiki"	Colorless	Colorless
"American Mineral Colza"	Brown	Dark Brown

It will be observed that American oil is most easily affected by the action of H_2SO_4 and Kubiki is not affected so easily.

Behavior Toward HNO_3.

I have found that the action of fuming nitric acid on oil is one of the most interesting and important phenomena. I think this nitric acid test will give light on the composition of oil; 5 c.c. of the samples are taken in a graduated tube and 1 c.c. of fuming nitric acid is added. Each tube was stirred well for a minute, and when the violent action has ceased and the nitric fumes no longer come off, then the three layers are to be distinctly observed in the tube, the upper layer being an unaffected oil and the lower layer being nitric acid. The middle layer was an orange semi-solid substance resembling nitrobenzine. The quantity of the middle layer produced by this action depends on the nature of the hydrocarbons which compose each oil. It will be observed that Kubiki oil produces notable quantities of this middle layer, and Russian oil directly the opposite. The other four are about the same in this respect. It is evident that the heavier distillate produces the larger quantity of the middle layer than that of the lighter distillate in one oil. I have examined more in detail, this relation of parallel products of each oil and where the percentage of each oil acted on by fuming nitric acid was noted. Comparative figures were obtained as follows:

	FRACTIONS				
SOURCE	125°-150° C.	150°C-175°C.	175°-200°C.	200°C-225°C.	225°-250°
"Chester"	6	8	12	14	18
"Anchor"	2	4	4	8	14
"Tank Oil"	12	14	16	18	20
"Higashiyama"	12	14	16	18	20
"Nishiyama"	6	12	16	22	26
"Kubiki"	14	19	20	26	30

Kubiki oil was affected by fuming nitric acid the most violently through all the distillates.

The orange colored semi-solid substance was heavier than water and soluble in alcohol and ether. The color changes to dark orange by the addition of alkalies. Its odor resembles nitro-benzine, but it does not have the reactions of nitro-benzine. Perhaps this substance is a mixture of oxidized products and nitro-compounds of the same hydrocarbon.

I have also conducted the nitrification test for each sample. The nitro-sulphuric acid for the nitrification test was prepared by mixing 2 vol. of H_2SO_4 (1.830) and 1 vol. of HNO_3 (1.530). This prepared acid was considered to be a solution of $HO.SO_2.O.NO_2$ in Com. H_2SO_4. But I have not obtained reliable results by this test.

Sulphur.

It is very difficult to determine the very small quantity of sulphur in kerosene, but the sulphur determination becomes very important in the course of certain researches on the desulphurization of oil distillates, and also in the analysis of burning oil. I have devised a testing apparatus to determine the amount of sulphur actually present in kerosene. The testing apparatus is represented by Fig. 1 and Fig. 2. Fig. 1 shows the vertical section of the testing lamp; (A) is an oil reservoir which is fitted with a wick and wick duct (B); (C) is a bent chimney which fits on the neck of the oil reservoir (D) by means of the burner (E), air being admitted to the burner through four draught holes (F). Fig. 2 shows the whole arrangement of the testing apparatus. (A) is the lamp shown in Fig. 1. (B) is an absorption tube. This absorption tube has a capacity of about 300c.c.; it is fitted with a cork (C), containing two holes, into one of which the tube (D), communicating with an aspirator inducing a constant draught, is inserted, and into the other a long tube (F), connecting the lamp chimney, is inserted. The absorption tube (B) is filled with small pieces of glass rod saturated with an absorbing liquid which is prepared by adding bromine to a 10 per cent. solution of potassium hydroxide; enough bromide to produce a pale yellow color, which is then removed by exposition to the air. This solution will absorb and oxidize the vapor of sulphur compound generated from the burning. The test is carried out as follows: The absorption tube being filled with 20c.c. of the solution, the lamp containing a known weight of oil is lighted, and a good draught induced by the aspirator but not strong enough to make the flame smoke or draw the solution out of the absorption tube. The exact weight consumed is ascertained by difference of the oil before and after burning. After remaining lighted for six hours the lamps may be extinguished. The solution is drawn off, and the vessel rinsed out two or three times with 30c.c. distilled water. The sulphuric acid thus oxidized is then determined as barium sulphate in the usual manner. The results obtained are as follows:

	Per Cent of Sulphur
American oil, "Chester"	0.0272
Russian oil, "Anchor"	0.0677
Japanese oil, "Higashiyama"	0.1513
Japanese oil, "Nishiyama"	0.0867

From the above results it will be seen that Higashiyama oil contains notable quantities of sulphur. The above sample taken was one of the second-class oils having a specific gravity of 0.8326, corresponding to 38 per cent. of the crude oil; and Nishiyama oil taken was also of the second class, having a specific gravity of 0.8061, corresponding to 34 per cent. of the crude oil.

Bromine Reaction.

For the determination of the olefines in petroleum the bromine reaction is available. I have used an approximately decinormal solution of bromide, made by dissolving 1 c.c. of bromine in 375 c.c of CS_2. And this solution was rendered perfectly anhydrous by the addition of some lumps of dry calcium chloride. 20 grams of each oil were placed in perfectly dry stoppered flasks in one series. The solution of bromine was then added, drop by drop, from a burette. Then the flask was stoppered and the contents were stirred thoroughly. The progress of absorption was observed from time to time. In American oil, a considerable quantity of bromine solution was required before the whole took the color. Kubiki oil at first likes the color and it seems as if it has some capacity for absorbing, but after some minutes the absorption capacity increases suddenly and the oil becomes quite colorless.

Iodine Asborption Value.

I have determined the iodine absorption value of each petroleum by Hiibble's method. The results obtained are as follows:

	Iodine Absorption Value.
American oil, "Chester"	26.05
Russian oil, "Anchor"	0.87
Borneo oil, "Tank"	0.88
Japanese oil, "Higashiyama" (A)	1.51
Japanese oil, "Higashiyama" (B)	1.85
Japanese oil, "Nishiyama" (A)	1.58
Japanese oil, "Nishiyama" (B)	1.79
Japanese oil, "Kubiki" (A)	1.75
Japanese oil, "Kubiki" (B)	1.90

The American oil has the greatest iodine absorption value and the Russian oil has the least. It is a most remarkable fact that American petroleum contains a large quantity of the olefine series of hydrocarbons and the other five do not contain as much.

Conclusion.

The following conclusions were arrived at from analytical determinations described above.

American oil, "Chester," imported by the Standard Oil Company, differs widely in its properties from the other five oils in the following respects:

1. Lower density.
2. Lower density and higher boiling point of parallel products.
3. Higher illuminating power.
4. Weak capillary power.
5. Large quantity of solid paraffine
6. Behavior toward sulphuric acid.
7. Higher iodine absorption value.

Russian oil, "Anchor," Borneo oil, "Tank oil," and the Japanese oils, with the exception of Kubiki oil, are similar

Japanese oil Higashiyama A.....0.8200
Borneo ::::::: ..lw —. 6(0...* taoin taoin taoi taoinhrdl
Japaneseoil Higashiyama B 0.8520
Russian oil (0.8223)..... — 15 126
60 40 c. c. 73 F.

in their properties in the following respects:

1. Density.
2. High specific gravity and low boiling point of parallel product.
3. Less illuminating power.
4. High capillary power.
5. No paraffine and vaseline
6. Behavior toward sulphuric acid.
7. Iodine absorption value.

Kubiki oil is characterized by the following.

1. Smoky oil.
2. Large quantity of vaseline.
3. Behavior toward fuming nitric acid.

It is impossible to manufacture commercial kerosene the same as Pennsylvania oil from our crude oil. If we take the sp. gr. 0.800, as on Pennsylvania oil, then the flashing point will be reduced. If we take the higher flashing point, as on American oil, then the density will be increased.

But it is possible to manufacture commercial kerosene similar to Russian or Borneo oil from our crude oil, by reducing the yield of the distilled products and by removing the sulphur compounds.

CALIFORNIA OILFIELDS, LIMITED.

The eighth annual report of the California Oilfields, Limited, covering the business of the corporation for the year ending December 31, 1908, has been submitted to the stockholders at a recent meeting held in London.

It shows that of the total production of petroleum in California for the past year the Limited's output was over seven per cent of the whole, or an aggregate of 3,563,678.77 barrels.

Pays 30 Per Cent.

A dividend of 20 per cent was declared, making a total of 30 per cent for the year, or about $600,000. The company had seventy-three producing wells on December 31, and sixteen wells drilling. It has never had a dry hole.

Small Portion Drilled Up.

The output of the company is almost entirely refined oil of high gravity, which finds a ready market owing to the scarcity of oil of that quality. In addition to the other improvements and developments of the property in the past year, the corporation acquired its own water plant, having purchased the property and equipment of the Valley Water Company

Of the vast acreage owned by the Limited only a very small portion has been drilled up, operations up to the present time having been principally along the lines of adjoining property.

RAILROAD LAND LOCATED.

Every acre of the Southern Pacific Company's undeveloped oil land in the Coalinga field has been located on during the last few days. The locators are all Coalinga residents, and for the most part the move is a concerted scheme with the ultimate intention of perfecting a strong organization. A suit instituted by a San Francisco attorney to test the validity of the railroad company's grant of agricultural land, which has since proved oil bearing, is now pending, and the terminations of these proceedings will largely determine the course of the recent locators.

UNION-INDEPENDENT COMBINATION

By far the most important event in the recent history of the oil industry of California is the working agreement between the Union Oil Company and the Independent agencies of Bakersfield and Coalinga.

The Producers' Transportation Company has been organized with a capital stock of $7,000,000, to build a pipe-line to the Pacific Coast from the different fields of Kern County and from Coalinga. The pipe has already been ordered. It is expected that the line will be completed by the first of February. In the meantime, storage facilities are being provided in the various fields to accommodate hundreds of thousands of barrels of oil and, together, with private storage of producers, it is likely that millions of barrels will be ready to run as soon as the line is completed.

The Union Oil Company is guaranteeing the financial success of the proposition, although a large portion of the money will be supplied by the independents themselves. It is expected that the cost of the line will be in the neighborhood of $3,000,000. In addition, the Union provides its marketing facilities, and in fact, has added materially to the fleet recently, in order to take care of the additional quantity of oil that will seek this outlet.

W. L. Stewart and Donzell Stoney have been designated as members of the Board of Arbitration by the Union Oil Company, and L. P. St. Clair will represent the local sales agency. The Coalinga members will be appointed in a few days.

The marketing agreement brings about an alignment of interest which control fully 50,000 barrels of oil per day. The Union is now practically a member of the producers' agency, pooling its oil and handling it upon the same basis as it handles that of the independents.

Fourteen per cent is designated as the gravity of oil that may be received for transportation through the pipe-line. Oil that is inaccessible to the pipe-line or of too low a gravity, will be transported by cars. The contract arranged between the Executive Committee and the Union, providing in detail for the sale, storage, transportation, etc., of oil, was adopted almost without debate.

At a subsequent meeting of the directors of the Producers' Transportation Company bonds to the amount of $3,500,000, maturing in 1922, at 5 per cent, were authorized, to be issued to provide for the construction of the pipe-line.

Through the Union Tool Company, the 230 miles of eight-inch pipe was ordered. Of this amount the Youngstown Sheet and Tube Company got 170 miles, and the La Belle Pipe Company, of Steubenville, Ohio, 60 miles. Pipe is to be delivered at the minimum rate of three miles a day, and maximum rate of four miles. Shipments, it is supposed, are now being made. The plans provide for sixteen pumping stations. Of these, four will be used to send the oil from Dudley to tidewater, along the main line. Three will be required on the Coalinga branch, four from Kern River, and five from the Kern County West Side fields. The pumps and machinery have not yet been ordered, but will be very shortly.

The organization of the Producers' Transportation Company is composed of L. P. St. Clair, president of the Bakersfield agency, president; S. W. Morsehead, of the Coalinga agency, vice-president; Giles Kellogg, secretary of the Union Oil Company, secretary; H. H. Welsh, of the Coalinga agency, treasurer. The other directors are: W. L. Stewart, vice-president and general manager of the Union Oil Company; M. V. McQuigg, of the Coalinga agency; J. S. Torrance, treasurer of the Union Oil Company, and L. W. Andrews, attorney for the Union.

The combined strength of the Union and the independents is put into the deal, and the organization will, therefore, commend itself in every way to producers and purchasers of oil.

The company, as has been stated before, is incorporated for $7,000,000, in 70,000 shares at $100 each. The arrangement entered into is that the members of the different agencies are to have first call for the purchase of stock, and the Union is to subscribe all that is remaining. The $3,500,000 issue of bonds has been fully cared for. From present indications it looks as though the producers themselves will control the bulk of the stock. The pipe-line officials have met with ready assistance. Following the agency meetings, which are called for next month, at which the entire plans of the promoters will be laid bare, it is expected that the support of the proposition will be substantially swelled. The agencies at the present time are holding open door, and are welcoming new members. How long this condition will last is problematical, as it stands to reason that when the independent concerns are in a fair way to reap the success they have been striving for during the past few years, the companies that have been holding back to see whether or not they made good, and those that have opposed them in the past, will not be given the privilege of reaping the benefits of their labors. The situation will be very interesting.

UNION ADOPTS PROFIT-SHARING PLAN.

In line with other progressive features of the management of the Union Oil Company, comes the announcement of its employe's profit-sharing plan, which provides that each employee may become a stockholder at an estimated net cost per share of $64.56, when payments are completed. The stock is selling in the open market at $105 per share, and should, when the stock is all paid for, be selling at a much higher figure.

Stock subscriptions will be paid for by deduction from pay-rolls at the rate of $1.50 per month per share, and by the application to the payment thereof of the Employes' Additional Compensation, as hereinafter stated, and in no other manner. No certificates of stock will be issued on these subscriptions, and the subscriber will not own the stock until it is fully paid for in the manner herein described.

The company is interested in the highest welfare of its employes; therefore, it seeks to abolish such practices as tend to degrade men, wrong their families, or impair their value for service. Hence, the privileges herein offered are not intended for those who use intoxicants, indulge in gambling, or visit places of evil resort, as it is not desirable to retain such employes permanently on its pay-roll, and the company reserves the right to cancel subscriptions of such employes and refund payments made as above.

As additional compensation for meritorious and satisfactory service, there will be credited as follows, to those whose names shall appear on the list to be submitted by each chief of department, a portion of the profits of the company, out of the net profits only, as follows:

First—On the 20th day of each month, upon each share of stock subscribed, a sum equal to the amount of the dividend declared by the company for that month on each share of issued stock.

Second—At the expiration of each year, the further sum of three dollars per share, on each share subscribed.

For convenience of operation, the Board of Directors has designated an arbitrary five-year period, beginning January 1, 1909, and has also in contemplation the creation of periods commencing on the first day of January of each year thereafter.

At the close of the said five-year period, and at the close of each of the periods which may be hereafter established, a fund will mature for those of the subscribers who have rendered continued and meritorious service in the employ of the Company for the full period, and by payments and earning of the additional compensations have completed the payment in full for their stock, and still hold the stock.

In the event of death or total disability during the first three years of the five-year period herein established, there shall be returned and paid to the subscriber, or his legal representative, all sums paid by him by deduction from pay-rolls, and interest upon the same from the time of payment at six per cent per annum, and also the sums credited him as Employe's Additional Compensation, as provided.

In the event of death or total disability during the last two years of the five-year period, the subscriber or his legal representative shall receive the full number of shares subscribed for, as payment in full for services rendered. The shares so issued and delivered shall participate in the maturity settlement provided, if still held by subscriber or his estate.

This estimated net cost per share ($64.56) is based on the assumption that dividends remain the same as at present. This may be further reduced by any credits accruing from maturity fund

OIL AT YUMA.

Locators of oil lands have returned to Yuma from the scene of the discoveries near Tacna, and report immense excitement in the district. The original find was made by Henry Laudemsilk, who, cleaning out the shaft of an abandoned mine a few days ago, found on the 110-foot level a fluid

Scene in the Summerland Oil Field, Santa Barbara County, California, where oil is produced from underneath the surface of the Pacific Ocean.

he believed to be oil. His decision was confirmed by others and the news of the find spread. Every foot of land in the vicinity has been filed upon. An oil expert will visit the district and report upon its value.

WATER FOR MIDWAY.

J. P. Clark, of Fresno, has associated himself with J. A. McClurg, Truman Hart, F. M. Helm, A. W. Anderson, of Fresno, and William Hinkel, of San Francisco, with object in view of investing $500,000 in the building of a water system for the Midway field, obtaining the water from Buena Vista Lake. Sites for wells have been secured at each end of the lake and prospecting for water is now in progress. There seems to be no doubt that the land selected for the wells is in the artesian belt.

Course of Pipe Line.

The trunk line will run past the point of the Buena Vista hills through the northern portion of the Maricopa district and thence to the highest ground in the Midway field. There reservoirs will be built and large quantities of water sufficient in amount to serve the fields for a considerable time will be stored. Duplicate wells and duplicate power stations are embraced in the plan, and every precaution will be taken to guard against interruptions.

Cost of Water.

The charge to be made for the water service has been fixed at one mill per gallon, 4.2 cents per barrel, and a minimum charge of $50 per month for each lease is to be asked.

Those who are instrumental in this movement state that the system will be complete in every detail and operators will practically be guarded against any loss of time because of lack of water. The system will be as comprehensive as the demand may grow into, and pipes will be run as far northwest toward McKittrick as may be required by the well drillers, and also run to the southeast into Maricopa field, serving that locality with an abundance of water.

The company is divided into 500,000 shares, and all the stock has been subscribed by the gentlemen named.

A SECTION SIX SUIT.

A suit in equity before Judge Church, in department two of the Superior Court of Fresno, of considerable interest to oil men was recently submitted. It was the case of G. A. Holste versus H. B. Guthrey in connection with alleged misdemeanors performed by Mr. Guthrey with the Section Six Oil Company.

It appears that the plaintiff, formerly secretary of the company, but now confessedly in the employ of the interests that are backing the prosecution, is merely a figurehead in the suit and will in no wise benefit by a favorable verdict other than to place the defendant in disrepute which, from evidence adduced at the trial, is the object sought by these interests.

Evidence was submitted by the defendant to show the existence of a conspiracy between the plaintiff and John J. Myers of the A. L. Wisner Company, of San Francisco and New York, to discredit Mr. Guthrey in the eyes of the stockholders of the Section Six Company as well as in the eyes of the general public. It was shown that a list of Section Six stockholders had been given by Myers and Holste to a certain publisher for the purpose of sending out papers which were to contain defamatory reflections upon the character of the defendant. This list was presented in court and identified by the plaintiff who remembered the specific occasion upon which it was given.

The cause of action was to compel defendant to restore the west half of the northwest quarter of section six, 21, 15, Coalinga, to the Section Six Oil Company.

The animus of the action dates back to the time when Mr. Guthrey severed his connection with Myers and the Wisners, after having become familiar with their methods and practices, and now his high standing among the oil men of the State as compared with the freely expressed opinion of a different character regarding the operations of his former associates, leaves a vengeful spirit as yet unquenched. The court made some scathing remarks concerning the nominal plaintiff which were not altogether complimentary to his sagacity in placing himself in the position he occupies.

The true story of the transaction is as follows:

When Mr. Guthrey came to California in the fall of 1906 he secured an option for the purchase of the east half of the northeast quarter of section 6,19,15 for the Section Six Oil Company, incidentally he also secured an option for the purchase of the west half of the same quarter section for himself. Mr. Guthrey and Mr. Haviland advanced some $7,000 on the purchase price of the east half of the quarter section for the Section Six Company, in the meantime paying $2,500 on the west half of the quarter section for themselves. Then the Section Six Oil Company began to receive money from the sale of stock and two checks for the $1,250 each were drawn by the said company to meet the third and fourth payments on the Guthrey option, the intention being to charge the amount to H. B. Guthrey against the $7,000 advanced by him. The plaintiff, who was then secretary of the Section Six Oil Company, either intentionally or otherwise, failed to make the proper entry but this later was corrected by a resolution of the board of directors, subsequently ratified by the stockholders and so

Another view of the Unique Summerland Field. No other instance of the kind is known in the world. These wells have been producing for years.

far as anyone knew at the time the transaction was closed. There was a chance, however, for a spite suit and the plaintiff, alleging fraud, claims that the two checks for $1,250 each were paid from the funds of the Section Six Oil Company; that Guthrey secured the option on the west half of the quarter section for the Section Six Oil Company and that all the properties of the Section Six Oil Company have since been disposed of.

As a matter of fact the property value of the Section Six Oil Company has increased from its original purchase price of $25,000 to a standing offer of over $200,000, a price which could be realized at any time. In other words the stock value of the Section Six Oil Company has increased from its original purchase price of 30 cents per share to more than 50 cents per share and with a development now progressing on the corporation's holdings should, within a brief period of time, reach its full par value.

THE FUEL QUESTION IN TEXAS.

The question of fuel is a grave one in many parts of Texas. There is probably not a State in the Union where so many experiments are being carried on, and where the methods of firing change so often as in Texas. Crude oil is preferred in the majority of places, and seven out of twelve plants visited were equipped to burn oil—at the right price. But the price of oil in Texas is as changeable as the weather in Cleveland. In fact, it is believed by many that a certain man in Cleveland has a great deal to do with the price of oil in Texas, but this was strenuously denied by an oil man with whom I talked the other day. Just at present the price of oil is soaring, and this may or may not have some connection with the automobile full of Standard Oil money which was unloaded at the State capitol building at Austin a few days ago. Uncle Sam's big fine did not stick, but they do things differently in Texas. Perhaps Texas will pay it back in the long run. At any rate oil is up just now, and several of the oil-burning traction plants are preparing to change back to coal.

Oil buying is a great gamble, and the traction manager who can get in right at just the psychological moment can show beautiful decreases in his operating expenses as long as the contract holds good, but if his contract happens to expire at the wrong moment he is likely to find himself in a bad fix.

They say that the Chinese invented the idea of burning crude oil. At any rate, the Chinese idea of selling goods has been adopted in selling oil. The Chinaman figures that if you buy a little, you don't need it very badly, but if you want a great deal of anything it shows you need it badly, and the price increases correspondingly. It is so with oil in Texas. The oil man told me that the price on one car that day was 62 cents at the wells, but on a 100,000-barrel order the price was 88 cents. He explained that the price was regulated by the demand, and that usually the demand was greater than the supply. The benevolent oil company aims to let everyone have a bite; hence, if you want a large supply you have to pay more for it. He also explained that some of the big steam roads were still buying under contracts made several years ago at around 27 cents, and the oil people shed tears every time they load a barrel of oil for this road. To make up for it, the people who want big supplies these days have to pay $1 and in some localities $1.25 for the same product. New fields are constantly being opened up and the price frequently fluctuates from 50 to 90 cents in a day or two. So the traction operator who burns oil usually sleeps with a ticker alongside of his bed. The oil man said that one barrel of oil was equal to one ton of coal, hence it was better to pay as high as $1.60 per barrel for oil than $5.50 per ton for coal, which is the price of good lump and slack in some portions of the State. A number of roads figure that $1 for oil is about the breaking point.

The best coal used in Texas comes from the McAlester district in Oklahoma. It is cheap at the mines, but the freight rates bring it up to from $4 to $5.50 in the southern part of the State. McAlester coal deteriorates rapidly when exposed to the air and is subject to spontaneous combustion if stored in large piles, so that it is difficult and undesirable to store it in large quantities.

The power stations at Temple and Austin are arranged to burn either oil or lignite. Lignite is a half-grown coal found in that immediate neighborhood. It shows fixed carbon 25.2 per cent, volatile matter 46.2 per cent, ash 9.5 per cent and moisture 19.1 per cent, and it has a specific gravity of 1.32. It costs 75 cents at the mine, or $1.30 delivered at Temple, and in steam-producing properties it requires about 1.8 tons of lignite to equal 1 ton of McAlester coal. There is little ash and no clinkers, but the item of labor is largely increased on account of its free burning properties. The ash produced is high in acid and must be removed frequently.

At Abilene they burn lignite mixed with a high-grade oil, while the company at San Angelo uses lignite in a gas producer and uses the gas in a gas engine. The company at Texarkana has its plant arranged for either natural gas or crude oil and at present uses gas.—George S. Davis in Electric Traction Weekly.

THE ORIGIN OF PETROLEUM IS INORGANIC.

Address in Support of this Theory by Eugene Coste, Before Canadian Mining Institute.

Eugene Coste, in concluding his address on petroleums before the Canadian Mining Institute, at Toronto, further supported his theory that the origin of petroleum is inorganic. He says:

"The volcanic origin of the petroleums forms a complete chain of evidence, with none of the links weak or missing. The very reverse is the case, when one attempts to explain the origin of the petroleums by means of organic resources; in doing so, well known chemical and geological facts are set aside and ignored and physical laws are distorted and abused. The geologists who still hold these views should seriously reflect on this, and I am confident if they do they will abandon and relegate to the past the old unsupported notion of the derivation of petroleum from organisms, and that they will come to the conclusion that this idea is now unworthy of the progress made by the geological science of to-day.

"When one considers that there were produced in the United States alone last year 184,000,000 barrels of oil and $53,000,000 worth of natural gas, he can fully appreciate the great economical importance which petroleums have attained. It is essential, therefore, even leaving aside the purely scientific aspect of the question, that the origin of these products should be understood in order to understand a basis or guide for the intelligent exploration of the many new fields yet undiscovered, and which are to supply the world with even vaster quantities of petroleum in the future. The correct understanding of the volcanic origin of the petroleums furnishes us at once, as a matter of fact, with the solution of this problem of how and when to look for new fields. We must follow the structural or teutonic of disturbances and fissuring or the fractured belts along which the solfataric hydrocarbon emanations come up from the interior."

MINERAL OILS AT BATOUM.

Reporting on the trade and commerce of Batoum and district during 1908 the British Consul Wm. P. Stevens says in reference to mineral oil that "although an improvement in the exports of mineral oils from Batoum during the year took place, the trade was depressed. The industry is also far from being in a satisfactory condition. Prices of oil at Baku were fairly high during the year, but the wells are apparently giving signs of exhaustion. The production was calculated to be about 10 per cent short of the production of 1907, which in itself was deficient. The fact of the matter is, that producers have to drill their wells to a very much greater depth than was the case in former years, and as the result is problematic and the sinking of a well costs—owing to the great depth which has to be attained—close on £4,500 and even up to £5,000, producers are not inclined to undertake the drilling of new wells, and all the old wells which have been producing for so many years past are more or less played out. Unless, therefore, new territory is discovered, it is the general opinion that the wells at Baku will only be able to continue to produce sufficient oil for home consumption with no margin for export to foreign countries. Towards the end of 1908 a slight spurt took place in the exports of mineral oil products from Batoum, and at the present moment the trade seems to be very brisk, but I think that this improvement is likely to be only of a temporary character, seeing that when the navigation of the Volga opens there is sure to be a diversion of the trade in that direction.

"The boycott of Austro-Hungarian goods in Turkey has to a certain extent influenced the kerosene exports from Batoum during the last two months. Owing to the refusal of the Turks to use Austro-Hungarian kerosene the two case-making factories at Batoum, which are still working, have had quite a busy time ever since the boycott commenced, and are now manufacturing cans and cases for the dispatch of petroleum products to the Turkish markets with greatly increased activity.

"I regret to have to report the downfall of several of the British petroleum companies at Baku during the past year, the financial position of which has been going from bad to worse ever since the troubles of 1905 and 1906 took place.

"The business affairs of these companies had to be placed in the hands of receivers, and an administration appointed. This measure necessitated strict economy, the result being that work at the oil fields has been much curtailed, and workmen and staffs considerably reduced.

"The number of cases of petroleum shipped from Batoum in 1908 was 2,026,104 and the number of cans exported during the same period was 2,549,450, which together represent an actual kerosene export in cases of 5,941,492 poods, or 21,389,364 gallons.

"The total quantity of kerosene exported in bulk was 17,507,204 poods, or 63,025,940 gallons, and the grand total of kerosene exports amounted to 23,448,696 poods, or 84,415,304 gallons.

"The total exports of other petroleum products, in which are included mazout, spindle oil, lubricating and engine oils, are represented by the following figures: 19,801,369 poods, or 71,291,236 gallons.

"The grand total of the petroleum products that were shipped from Batoum to foreign countries during the past year were 43,250,065 poods, or 155,706,540 gallons, against 37,073,586 poods (133,464,912 gallons) in the year 1907 and 30,999,197 poods (111,597,609 gallons) in 1906, being an increase of 22,241,628 and 44,108,931 gallons on the two years mentioned respectively.

"The quantity of mineral oil products consumed at Batoum and by the copper mines at Dzansoul for fuel and domestic purposes in 1908 was 1,660,505 poods, or 5,977,800 gallons, and the stock of oil in tanks at Batoum on December 31, 1908, was 5,950,951 poods, or 21,443,420 gallons.

"The total quantity of petroleum products brought to Batoum by rail and through the pipe-line from Baku in 1908 was 44,625,829 poods, or 159,646,806 gallons, which, with the stock remaining in storage accommodation on December 31, 1907, viz., 6,235,692 poods (22,448,484 gallons), represented a grand total of 50,861,521 poods, or 182,095,290 gallons."

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THE EVOLUTION OF THE OIL INDUSTRY.

The evolution of the oil industry of California is an important phase of the industrial life of the State, the nation and the world because of the widespread influence of oil in that industrial life, and because of the fact that producers in California have at last apparently attained to the height of industrial independence much sought after but never attained by oil producers in any other part of the country or the world.

This independence has been attained by united effort on the part of producers who are members of the independent agencies whose officers have guided the ship of progress in such a manner as to make independence almost an assured fact, the culmination of their efforts being as yet in the future. So far have negotiations proceeded, however, that one can make no mistake in accepting it as a fact.

The plan evolved by Messrs. St. Clair, Morsehead, Welsh and others gets at the bottom of things and uproots preconceived notions that an oil producer should always be a producer and nothing more; that a marketing company should be a marketing company, and that a refining company should confine its activities to refining oil. In California we are about to see a combination of all these various lines of effort into one compact body with all these objects in view.

The co-partnership between the Union Oil Company and the independent agencies which is about to be consummated in the new independent pipe-line project will place the Union Oil Company and the producers in an enviable position, because the combination will control by far the larger portion of the oil produced in the State and at the same time will have facilities for marketing the product to all parts of the globe by means of oil tankers outside the control of all other influences.

The Producers' Transportation Company's bonds should be subscribed to by every producer so that every person furnishing or contracting for the delivery of oil through the new pipe-line will have a direct interest in the matter, thereby protecting himself in two ways. Should there be any question of a high rate for the transportation of oil, and there seems to be none at this time and no prospects for any in the future, producers will share, then, in the profits that may accrue. From whatever standpoint one may view the proposition producers will see the benefits to be derived from direct ownership in a project that is dependent upon them for its success and in turn upon which they are dependent for the maximum price and the biggest market for their product.

Every possible facility for the transportation of oil direct to the consumer wherever he may be will be provided in this deal. The markets of the world will be at the doors of the producer. A more ideal condition could scarcely prevail.

When the success of the plan has been fully demonstrated there is no question but that producers in other sections, principally the mid-continent producers, will attain sufficient confidence in the impregnability of their position to follow the example of California. At the present time these producers are devoting their energies largely to petitioning Congress to place a duty on oil in order to keep the imaginary flood of oil from Mexico from entering our home markets.

To be sure the Associated Oil Company has not as yet shown its hand but the serious effect of the deal on the Associated can not be overestimated as it will take from that marketing concern a considerable porion of its supply which will have to be made up by an increase of its own production and purchases of companies already producing and development of new territory. With the opportunity before the Associated of becoming one of the largest marketing companies of the world by the simple action of agreeing with the independent agencies which act as a unit, what can be thought of the policy that has let this chance go by? Producers are not babes, especially in California, and business deals are not usually one-sided propositions. The question now arises whether or not the Associated will become simply a heavy producer and marketer of its own oil, thereby placing itself in the same position as any producer with the exception that it has transportation facilities of its own.

Whatever situations may develop in the future it is believed that the position of real independence will preclude any possible damage that may arise from this source. The Union and the independents have evidently scored and both are placed in a stronger position than ever. The Union has been in the habit of growing ever since it started in business and the bigger it has become the less it has to worry about arbitrary competition from those who would desire a different situation.

California producers are to be congratulated upon their stand, their unanimity and their business sagacity in turning a trick that places those interested in an impregnable situation in the oil business of the world. With the one-sixth of the entire production of the United States under the one control it may look for active co-operation from outside sources or at least harmonious action on the part of heavy producers outside the agencies who will see their own interests conserved by following the lead of what promises to grow into the biggest single oil corporation in the world, barring the Standard. No one knows what will take place in the future as a result of the combination but it seems that the nucleus has been formed for a corporation as powerful in its inherent position as even the Standard.

PETROLEUM EXCEEDS GOLD AND SILVER IN VALUE.

The value of the petroleum products of the United States, reliably estimated at $200,000,000, exceeds the value of our gold and silver product combined. The daily production is about 600,000 barrels, and more than 100,000,000 barrels are stored above ground. Added to this is enormous waste caused by imperfect methods of handling or shortage of transportation facilities. The Oklahoma and Kansas fields are responsible for a production of 160,000 barrels daily; California, 160,000; Illinois, 110,000; Ohio, 45,000; Texas, 40,000; Pennsylvania, 25,000; West Virginia, 25,000; Louisiana, 12,000, and Indiana, 8,000. Mexico is now producing about 10,000 barrels a day, with a capacity of at least 25,000 barrels. It is estimated that the Mexican consumption is 2,000 barrels per day of refined and lubricating oils and about 8,000 barrels of crude

PRODUCTION OF PETROLEUM IN 1908.

Statistics Given Out By the United States Geological Survey.

On February 3, 1909, the Geological Survey published a statement showing the general progress in petroleum production during 1908, according to which the phenomenal production of 1907 had been eclipsed in 1908 by a production of between 175,000,000 and 180,000,000 barrels. The Survey is now compiling the final figures for 1908, which will show that the total production aggregated 179,572,479 barrels, valued at $129,706,258, an increase in quantity of 8.11 per cent over 1907. Oklahoma led all the States in production, with a total of 45,798,765 barrels, an increase of 5.23 per cent over 1907; California was a close second, with 44,854,737 barrels, an increase of 12.85 per cent over 1907; but Illinois gained the greatest percentage, rising from 24,281,973 barrels in 1907 to 33,685,106 barrels in 1908, a gain of 38.72 per cent. Colorado, Louisiana, Michigan, Missouri, Utah, Wyoming and West Virginia also showed gains in production. The declines were in Indiana, where it was nearly 36 per cent; in Kansas, 25 per cent; Ohio, 11 per cent; Texas, 9 per cent; New York, 4.3 per cent; Pennsylvania, nearly 6 per cent, and Kentucky and Tennessee, 11 per cent.

The average price of petroleum for the entire country in 1908 remained identical with that in 1907, but there were considerable variations of an important character in individual States. The most notable of these was the increase in price in California, from 37 cents a barrel in 1907 to 52¼ cents a barrel in 1908. The Gulf States, Louisiana and Texas, showed a decline in value from a little over 80 cents to 60 cents. The Appalachian oil showed a slight increase in value, from $1.75 in 1907 to $1.79 in 1908. On the whole, prices were remarkably steady considering the notable increase over the large production of 1907

In the following table are given the total quantity and value of crude petroleum produced in the United States during the years 1907 and 1908, by States:

Quantity and Value of Crude Petroleum Produced in the United States and the Average Price Per Barrel in 1907 and 1908, by States.

State	Quantity (barrels)	Value	Average Price Per Barrel
1907			
California	39,748,375	$14,699,956	$0.370
Colorado	331,851	272,813	.822
Illinois	24,281,973	16,432,947	.677
Indiana	5,128,037	4,536,930	.885
Kansas	2,409,521	965,134	.401
Kentucky, Tennessee	820,844	862,396	1.051
Louisiana	5,000,221	4,063,033	.813
Michigan, Missouri	4,000	6,500	1.625
New York	1,212,300	2,127,748	1.755
Ohio	12,207,448	14,769,888	1.210
Oklahoma	43,524,128	17,513,524	.402
Pennsylvania	9,999,306	17,579,706	1.758
Texas	12,322,696	10,401,863	.844
Utah, Wyoming	9,339	21,883	2.343
West Virginia	9,095,296	15,852,428	1.743
Total	166,095,335	$120,106,749	.723

State	Quantity (barrels)	Value	Average Price Per Barrel
1908			
California	44,854,737	$23,433,502	$0.5225
Colorado	379,653	346,403	.913
Illinois	33,685,106	22,648,881	.672
Indiana	3,283,629	3,203,883	.976
Kansas	1,801,781	746,695	.414
Kentucky, Tennessee	727,767	706,811	.971
Louisiana	6,835,130	4,131,173	.604
Michigan, Missouri	15,246	22,345	1.466
New York	1,160,128	2,071,533	1.7856
Ohio	10,858,797	14,178,502	1.306
Oklahoma	45,798,765	17,694,843	.386
Pennsylvania	9,424,325	16,881,194	1.7912
Texas	11,206,464	6,700,708	.598
Utah, Wyoming	17,775	27,920	1.57
West Virginia	9,523,176	16,911,865	1.776
Total	179,572,479	$129,706,258	.722

The increased activity in the three great fields—California, Oklahoma and Illinois—was the dominant feature of the situation rather than the discovery and opening of any considerable new fields. The principal new field to gain prominence was the Caddo pool, in northwestern Louisiana. The hoped-for increase in production from the Markham and Goose Creek fields in Texas did not materialize, and the total from the State showed a decline in spite of the increased production in the Humble pool. In the Appalachian field 7,115 new wells were drilled, of which 5,292 were producers, with a total initial production of 55,002 barrels; in the Lima-Indiana region 1,250 new wells were drilled, of which 1,088 were producers; in the new Illinois field 3,574 wells were drilled, of which 3,019 were producers, with an average initial production of 26 barrels a well. In the Mid-Continent field 3,490 wells were drilled, of which 2,587 were producers of oil, 471 were producers of gas, and 432 were dry; the initial production of the producing wells averaged 83.7 barrels. In the Gulf field only 819 new wells were drilled, 606 being producers and showing an initial production of 297 barrels. In California 617 wells were drilled, of which 594 were productive, and in other parts of the country 44 wells were drilled, yielding 24 new producers. From the total of 13,210 productive wells drilled, the initial production was 42.9 barrels.

COURT DECISIONS IN RE OIL LEASES.

The following recent decisions pertaining to oil leases should be of much interest to oil men:

Oil Lease; Right of Lessee.—The lessee in an oil lease giving him the exclusive right to explore for oil in the lands described, has a right of action for damages against one who invaded his exclusive right by entering upon the land during the life of his lease without his consent, and drills wells and removes and sells oil therefrom.—Backer vs. Penn Lubricating Co.; 162 Federal 627; June, 1908.

Oil Lease; Construction.—An ordinary lease, giving the lessee the exclusive right to explore for and sell oil from the land on payment of a stipulated royalty, does not give to the lessee the title to the oil in place.—Backer vs. Penn Lubricating Co.; 162 Federal 627; June, 1908.

Oil Lease; Nature and Construction.—Oil leases stand on a different basis from ordinary leasehold agreements, for the reason that the work which is to be done is ordinarily of an experimental and speculative nature, and if oil is not found no estate vests in the lessee. The rule that forfeiture or abandonment is not looked upon with favor is not applied to an oil lease.—Conklin vs. Krandusky (N. Y.); 112 New York Supplement 13; July, 1908.

Oil Lease; Abandonment.—Under an oil lease for 15 years and as long as oil should be found in paying quantities, the lessee drilled a well but found no gas; he afterwards removed all the drilling machinery and tools, except the casing in the well, and did no other drilling for more than ten years, this was held to be an abandonment of the lease.—Conklin vs. Krandusky (N. Y.); 112 New York Supplement 13; July, 1908.

A SUCCESSFUL JAPANESE COMPANY.

The Hoden Oil Company was established in February, 1893, in Nagaoka, the province of Echigo, with a capital of $7,470. In those days the petroleum industry was regarded in Japan as a sort of speculation, and many business men considered it undignified to engage in such an enterprise, but at present the company has a capital of 11,650 yen ($5,801,700), making 40 per cent dividend, while the shares are worth three times as much.

During the 16 years in which the company has been in business its capital has increased by 780 times, the reason being its absorption of 127 petty companies and guilds, the total capital of which was $11,175,000. The advantage of combination is manifest in any business, but it is particularly the case with the petroleum industry. There was no difficulty in bringing about the amalgamation of small companies, as the desire for amalgamation was so keen that no written contract was made, a verbal promise being quite sufficient. When the company was founded the number of oil wells was only two, but at present we count 1,359. The average rate of dividend for 16 years (31 terms) is 36.4 per cent.

The success of the company is largely attributable to its peculiar organization, which is worked on the co-operative plan. All the members of the staff are treated on the family basis. Various considerations, such as bonus, pensions, and allowances, are tendered to all the employees of the company. Both employers and employees identify their interests with the working of the company, and such harmonious relations form a great factor in pushing its business.

JAPAN NEEDS PETROLEUM.

That the oil fields of Japan are far from supplying the wants of Japan is evident from the following statement showing the imports of petroleum during the years 1906 and 1907:

Whence Imported	1906. Gallons.	Value.
United States	44,510,557	$4,758,816
Dutch India	12,084,279	1,137,529
Asiatic Russia	1,184,202	94,371
All Other Countries	1,649,969	147,904
Totals	59,429,008	$6,138,793

Whence Imported	1907. Gallons.	Value.
United States	44,489,816	$4,734,626
Dutch India	24,094,321	2,250,877
Asiatic Russia	1,581,477	148,245
All Other Countries	12	2
Totals	70,165,626	$7,133,750

ANNOUNCEMENT.

The undersigned, having resigned from the United States Geological Survey with which he has been connected during the past six years, takes pleasure in announcing that he has begun practice as a Consulting Geologist and Engineer, and is prepared to undertake management, operation, exploration, development, geological and topographical surveys, and the appraisal of possibilities of properties. The examination of oil properties will be made a specialty. Particular attention will be paid to the interests of foreign clients.

RALPH ARNOLD,
726 H. W. Hellman Building,
Los Angeles, Cal., U. S. A.

Reported by
Special Field Representatives
of the
California Derrick

STANDARD RUNS FOR MAY AND APRIL.

The Standard runs in the California fields for May were:

District	Barrels
Kern River Field	108,516
Coalinga Field	523,612
Newhall Field	5,507
Santa Maria Field	212,883
Midway Field	119,262
Total	972,780

In April the Standard runs were as follows:

Kern River Field	147,538
Coalinga Field	525,970
Santa Maria Field	175,030
Newhall Field	6,056
Midway Field	108,987
Los Angeles Field	15,489
Total	979,070

COALINGA.

The output of oil of the Coalinga district for the month of May aggregated the enormous total of 1,354,587 barrels. One year ago in May the production was 854,300 barrels, showing an increase of nearly sixty per cent. Who says Coalinga is not the biggest oil producing section in the world? This is at the rate of approximately 16,000,000 barrels annually. It is a question whether or not this is the best record in any one month in the history of California's oil fields. It is possible that Kern River in its palmy days may have exceeded this amount in a single month.

Of this amount something like one-third went into storage. Most of the storage oil will be held until a large reserve is created, a reserve sufficient to fill any large contract that may arise in the near future. The storage oil which has been accumulating by reason of lack of transportation facilities is not considered as a menace to the oil business but as good business policy. Additional facilities for storage are being erected and before many weeks several large steel tanks will be erected in addition to other facilities that will be provided.

One of the principal items of news here is the fact that E. L. Doheny has, with the American Petroleum Company, contracted his oil to the Associated at a price slightly in advance of what the agency proposed. In consequence of Mr. Doheny's action it is reported that he is to be made a director of the Associated. The contract with the agency does not expire until February, 1911, leaving two years yet to run before the oil can be delivered to the Associated. This is a straw indicating the probability that, despite the large increase in the production of oil in the State, lower prices are not anticipated. It is further believed that the Associated, after due consideration, will be making a still higher price for oil in order to keep producers, as far as possible, from joining the agencies.

The Coalinga Mohawk promises to be one of the biggest wells in the district. The oil is of 32 gravity and will command a considerable premium over the price of fuel oil as this grade is in much demand by the Standard for refining purposes. The water is still troubling to some extent but this difficulty will be removed shortly.

The California Oilfields Limited brought in a fine well a short time ago on Section 26-19-15. This is number four and is rated at between 1,500 and 2,000 barrels, having made the latter figure for several days. The gravity runs much higher than the average and adds much in the way of income to the company. The company paid thirty per cent on its capitalization last year and this one well should enable it to pay much higher dividends the coming year.

The Coalinga Aladdin is down something over 2,300 feet and expects to shut off the water shortly. There is every prospect that the well will be a good one, in fact, it will be disappointing if it does not come far better than 400 barrels as it is in good territory, being in section six, same as the Lucile.

The Peerless is finishing up its well No. 16 at a depth of about 1,600 feet. A new rig has been erected on Section 22-19-15 and drilling will be pushed.

The British Consolidated is building a rig on Section 12, 19-15 and as soon as completed drilling operations will be started. The company has a number of wells already drilled and expects to develop the balance of the territory as rapidly as possible.

At the meeting of the stockholders of the Hub Oil Company H. C. Kerr was elected president; F. Bennett, vice-president; G. E. Satchell, secretary; F. M. Nevins, C. A. Stevens and John Mills constituting the balance of the directorate.

W. W. Sweet, who held an option on the property of the West Coalinga Oil Company, the north half of the northeast quarter of fractional Section 12, 21-14, for a month past, has consummated the purchase of the property for $42,000. It comprises 57¼ acres and will be paid for in four payments. $10,000 was paid down, $10,000 will be paid after the first six months, $12,000 after the first year and the last $10,000 six months thereafter. Mr. Sweet will organize the Great Western Oil Company of Coalinga for the development of the property.

The directors of the West Coalinga have declared a dividend of 34 cents per share, amounting in all to approximately $9,500, as the result of the first payment. Similar dividends will be declared with each subsequent payment and the outstanding stock will be taken up with the last. The stockholders will realize comfortable returns on their investment.

The following arrangement has been made for the equalization of the deliveries of oil from the Coalinga Independents to the Associated:

The Associated is to handle its full capacity from Coalinga, which, aside from its own and that of the cheap contracts, is about 8,000 barrels a day. This will a little more than half cover the present production of the members of the Coalinga Independents, and, according to the arrangement, each company is to have 60 per cent of its own production taken off of its hands.

The care of the remaining 40 per cent surplus furnishes a problem. Members of the agency have no less than 340,000 barrels in storage now, in sump-holes and tanks, and storage capacities are about exhausted. An effort is being made to have work shut down as much as possible until the Independents' pipe line is able to handle the entire product.

The Amy Oil Company brought in its No. 1 last Monday and has been flowing several hundred barrels every day since, which is said by those interested to be 1,000 barrels. It will no doubt settle down as one of the regulation section 6 producers, which are all large. The old Marion Oil Company property, consisting of thirty-two acres in the same section, has been taken over by a new concern and will be immediately developed. This property was sold some time ago for $600 an acre. The new company pays $1,000 an acre and is glad to get it at that price. The Silver Tip Oil Company is another new one to drill in this section. In fact, the entire west side is extremely active, there being seventy-four strings of tools in operation and thirty-two rigs up.

No. 12 of the K. T. and O., on Section 13, 20-14, has a flow of bottom water at about 1,630 feet. It is anticipated the water will easily be shut off and a big oil producer secured.

The Coalinga Alpha is down 130 feet with a 14-inch open hole. A little trouble is being experienced with water from the nearby creek, but this will be shut off without much effort, it is hoped.

The South Field Oil Company, formerly the Smith and Bryner, is feeling a shortage of water. The water supply in the creek is falling off. A 1,200-barrel tank was erected last week to store the supply available.

The Boychester Oil Company, which has forty acres in the northeast corner of Section 18, 21-15, has a derrick erected and will start in rigging up in a short time. They propose to pipe water through a two-inch pipe to the drilling site from a spring in the southern part of the section. The drilling operations will be under the supervision of W. C. Rielly. The organizers are: S. R. Adams, W. C. Rielly, Thos. Smith, C. I. Huss, J. B. Derruette and A. B. Shaw, the last named five being directors. They expect to go between 2,500 and 2,800 feet for oil.

The W. K. Oil Company's No. 3 has just been completed and its owners estimate its output at several hundred barrels a day. The Coalinga National Oil Company is the name of a new concern organized to operate on Section 8, 20-15, where it has leased eight acres at one-sixth royalty, with an option to buy at $1,500 per acre. The Southeastern Limited is another new

concern to enter this section of the field and is already operating with a rotary rig, having in twenty days made 1,000 feet, which is a record for this district.

The Devil's Den District, thirty miles south of Coalinga, continues to attract attention and another company has been formed to drill there. It is called the Cosmo Oil Company and controls 320 acres.

SUNSET—MIDWAY—McKITTRICK.

In the Sunset district developments are going ahead very rapidly although much difficulty has been experienced and much delay caused to operations by reason of lack of water. Various arrangements have been made by different companies according to the exigencies of the situation for a water supply and in most instances no further trouble is expected.

The town of Maricopa is putting on a metropolitan appearance. It is the center of the business of western Kern County fields and is prospering accordingly. It is growing with great rapidity.

The La Blanc, under the superintendency of B. M. Howe, is down nearly 2,500 feet in the characteristic blue shale of the district. It expects to get the oil sand within the next 75 feet of drilling. There is every reason to expect a big well.

The Lady Washington, in the southern portion of the same section, in its No. 2 well is down close to 1,800 feet and expects to reach the main oil sand within 50 feet. Oil is coming up at the rate of several barrels daily while operations are being pushed, presumably from the tar sand encountered a short time ago.

The Johnson well, still further south, is said to be good for 500 barrels of oil daily. It is understood that the well is not as yet completed.

A syndicate consisting of E. L. Doheny, of the American Petroleum Company, Jno. Baker, Jr., formerly general manager for the Union, and F. C. Ripley, of the Santa Fe oil department, and others, have recently acquired the lands of the Western Minerals Company, in the southeastern section of the Sunset field on the "flats." It consists of all of Section 17, 11-23, and 120 acres on 18, 11-23. The terms of the deal are that the Syndicate is to spend $100,000 in development work, for which there will be deeded one-half the property. The properties are located near the Johnson lease, on which a well has just been brought in, credited with a daily output of 500 barrels.

The Yellowstone Oil Company has leased 120 acres in the Sunset field in parcels to three different concerns. The leases call for the completion of one well at least each year for a period of four years. The Yellowstone has also leased its McKittrick property on the same terms.

The Crandall-Matson well on 31, 31-23 in the northern midway district is doing 200 barrels a day. This strike has caused much excitement and will no doubt result in considerable drilling here. Already the Pioneer, Strasburg and Hayden companies are drilling and several others are making preparations.

The Anaconda Oil Company, 12, 11-23, has a fine new well, No. 5, which is down to about 1,200 feet. The well has been doing 300 barrels per day for the last week and there are no signs of diminution in the production. No. 9, belonging to the same company, is now 1,000 feet deep and has been cemented. The sealing up process took place in the neighborhood of a month ago, however, and consequently it is expected that a string will start on the well again this week.

The New Center Oil Company is erecting a fine new boiler house of corrugated iron. It is 38x46 feet and contains two 70-horse-power boilers. This is part of the new water plant of the New Center Company, the rest of which consists of the cleaning tank and a 1,000-barrel water storage tank.

Well No. 1 of the Loma Vista has been cemented and the water shut off. As soon as the cement hardens operations will be recommenced.

The middle of the current week the Hazelton Crude, Sheriff Kelly's property, will resume operations on its well. This hole is down nearly a thousand feet, but it was cemented about a month ago and is only now sufficiently hardened to permit of drilling operations.

The Sunset Rex Oil Company is erecting a rig for well No. 4 on its lease on Section 2, 11-24.

The Adeline Oil Company has twelve wells, all producers, on its lease. The output from these wells was between 12,000 and 13,000 barrels last month.

The new well of the Gate City Company, No. 9, is now 960 feet deep. Drilling has been discontinued and cleaning out is going on. It is expected that this will be a good producer.

The Fulton's well, No. 10, on Section 1, 12-24, is down 900 feet with 11⅝-inch casing. No. 7 is still producing at the rate of from 100 to 150 barrels per day.

The Sunset Securities Oil Company is a new concern erecting its first rig on a lease on Section 29, 11-23, southeast of Sunset and adjoining the Western Mineral Company's lands on which the Ripley Company is starting work.

The Manhattan-Midway Oil Company, under the superintendency of J. O. Dart, operating on Section 32, 32-24, on the old Stratton lease, has one producing well and is about to complete well No. 2, which is now in the second oil sand at a depth of 1,300 feet.

No. 2 on the New Center lease is to have new development. The old oil men in the country say it was this well that supplied most of the oil for fuel in the drilling of the other wells of this vicinity. Superintendent Osgood has put up a new rig and is going to drill deeper, the well being now only about 900 feet deep.

The Safe Oil Company's well No. 3 at Midway is now making about 300 barrels a day.

The Santa Fe is said to have purchased the Nome Oil Company's lease on Section 26, 31-22 in the North Midway field.

The Tight Wad's well No. 1 is reported to have gone into the first oil sand at the 1,200-foot level. This is the lease which our old friend Ed. Gillette is presiding over and is also superintending the W. T. & M. lease operating on what used to be the Altoona-Midway lease.

The Occidental Queen Company at Midway has had some hard luck in that they have had to abandon their well on the southeast quarter of 25, on account of water which they have been unable to shut off. This is a rare thing on 25 and it is thought that the Queen will be more successful in their next try.

With the entrance of the Wellman Oil Company into this field, as well as that of the F. C. Ripley Company, there is certainly a very promising future for the town of Maricopa.

The Wellman people are the ones who recently purchased the southwest quarter of Section 26, 12-23 of the Graham brothers for a sum reported to be $140,000. This property adjoins that of the Monte Cristo on the north and is in absolutely proven territory. The Wellman's have five rigs up already, and are building others every day, and it is understood that they contemplate starting and keeping in operation ten strings of tools until the entire quarter is developed. If his is done they will soon be among the largest producers in the field. This property lies but one-half mile from the center of Maricopa.

This company has already ordered and will erect on the property two mammoth storage tanks; one of 12,000-barrel capacity and the other of 67,000 capacity. This latter tank will be the largest of its kind on the coast, and the two will give the Wellman people a storage capacity of 79,000 barrels.

At McKittrick some trouble is experienced by producers in getting their oil marketed. The output of this field is gradually increasing, and the railroad finds it impossible to handle it all. Most of the properties here are controlled by the Associated, which seems to have first call on oil cars, and this fact handicaps what few independents there are. The Templor Ranch Oil Company and others in the extreme northeastern end of the field have decided to build a four-inch line from their wells to the railroad at McKittrick, owing to the failure of the Associated to build the line it proposed to several months ago. This failure, no doubt, is occasioned by the further failure of the Associated to find oil on the land it was drilling in the Templor district. There is a production here of about 1,000 barrels a day, which the new line will take care of. The new eight-inch line of the Associated mentioned above will cover the McKittrick field, and when finished will furnish ample shipping facilities.

INCREASE AT SALT LAKE.

Notwithstanding the decline in the Wolfskill gusher at Beverly there was a general increase in the output of the Salt Lake or Santa Monica field, to use the name the Associated gave it in its last annual report for May. No new wells of any importance came in but pumping appears to have been more steady. Another important consideration in such matters that many overlook is the weather. The big companies say that they find this most necessary to consider. Their reports cover this every day. The Associated, for instance, is able to compare each month with the previous thirty days and with the same period the previous year, not only as to amount pumped but also to all conditions surrounding work.

Good Weather Increases Production.

For instance, May's production was in fact higher than that of any morth this year. During January, February and March the weather was decidedly unfavorable. Material was handled with difficulty, then men work always with less enthusiasm when they slush through mud and face a score of petty troubles, each of which holds them back a little. In April there was an improvement but not so much as in May, when the ground was thoroughly dry and firm and there was not one bad day. Then, too, there were thirty-one days in May as against thirty in April. May's output was 325,000 barrels against 310,000 for April, 303,000 for March, 290,000 for February and 304,000 for January. But for the big Wolfskill gusher in the first months production would have been much lower.

Fullerton yielded 355,000, Los Angeles City 44,000, Whittier and Coyote Mills 71,000.

VENTURA.

In Ventura County, the first "oil county" of the State, in the vicinity of Santa Paula and Lespe canyon a revival is noted. While the oil here is of a high gravity and valuable, the drilling is very difficult, and the wells are small and operators have for several years neglected it. At present, however, there are fifteen strings of tools at work, operated by as many different concerns. The present output of the district is about 13,000 barrels a day. For May the production was 38,000 barrels, all of which was marketed. The Union covers this county with its pipe lines and handles all the oil.

HAS PORTER RETIRED FOR GOOD?

The departure of General Manager Porter for Europe is looked upon by some as the probable end of his connection with the Associated management. This is denied absolutely by all the attaches of the company but there are signs pointing to that. In the first place, his health is poor, and those who know him express grave doubts as to whether he will ever be fit to handle the amount of business he has attended to in the past; then too, he is unpopular with the producers. It would be foolish to conceal that fact; the feeling towards him may be unjust, but it is real. He has had a hard task in building up the Associated and he has accomplished it and naturally in the course of it he has made many enemies. Just at present the Associated needs to be popular more than ever, and it is probably the most hated corporation in the State, so far as the producers of oil are concerned.

Whittier May Become Head.

The likelihood of M. H. Whittier becoming executive head of the company is discussed with much interest. He is well liked and would be welcomed by the producers.

Some express the opinion that Mr. Porter will continue to be the nominal head but that Mr. Whittier and perhaps other directors will gradually take on more and more of the active duties. Mr. Porter's leave is said to be for two months, but his return in that time is thought doubtful. During his absence some big things will happen in the history of the Associated and its future career may be shaped largely thereby.—Oil World.

RAMONA STRIKES GAS.

The Ramona Oil Company, operating at Petaluma, a few days ago struck a heavy flow of gas, tests of which show it to be of a purity hitherto unknown. Several tests were made in order to check up the determination but all showed the same perfection. The well is down 800 feet. It is likely that arrangement will be made shortly to market the immense flow of gas to nearby towns.

The company will go ahead with drilling and will, within the next few days, secure a Parker rotary drill, the formation being such as to warrant the company in expecting to complete the wells in record-breaking time with the Parker outfit. The company controls 2,000 acres in the immediate vicinity but it is understood that Standard Oil people are on the ground endeavoring to tie up any available ground in the district as the showing of gas is sufficient assurance to warrant the assumption that there is a big pool of oil in the immediate neighborhood, this being the history of all gas fields.

UNION WILL SPEND $1,000,000 AT SAN PEDRO.

The Union Oil Company of California has acquired a controlling interest in the Outer Dock and Wharf Company, and approximately 5,000 feet of deep-water harbor frontage at San Pedro. The oil corporation will begin the immediate construction of a plant with immense tankage and refining and manufacturing facilities and make this port the headquarters of its Pacific fleet.

Four hundred thousand dollars is to be expended by the company within the year on development here, according to J. J. Torrance, a second vice-president and treasurer, and $1,000,000 in two years. Piers of concrete are to be built to increase the frontage to 13,000 feet, and the water depth at the dock line is to be made thirty-five feet by dredging.

The Union's plant will be on what is known as the Miner fill, reclaimed under the direction of Captain Randolph H. Miner, at the west side of the outer harbor, and well within the Government breakwater, opposite Dead Man's island. The company already has a depot in the inner harbor.

SOUTHERN PACIFIC OIL-BURNING ENGINE TESTED.

An oil-burning locomotive, weighing 300 tons, and said to be the largest locomotive of any kind ever built, has had a test over the Lehigh Valley Railroad from Philadelphia through the west. It was built by the Baldwin Locomotive Works for the Southern Pacific Railroad, and will be used for handling freight from San Francisco over the Sierras to Reno.

The engine has a hauling capacity equal to that of four freight locomotives. Its enormous weight gave a severe test to the railroad bridges over which it passed. In the engine's tender there is a capacity for 9,000 gallons of water and 2,250 gallons of oil for fuel.

The locomotive is declared to be a distinct success, and another is being built at the Baldwin works.

PALMER OIL COMPANY DIVIDENDS.

The Palmer Oil Company, owning the famous "Palmer Gusher" in the Santa Maria Field, has just declared four monthly dividends of two per cent each, payable on June 15th, July 15th, August 15th and September 15th, to stockholders of record on the first of each of said months.

Announcement of this dividend has been long expected, as it was well understood that the company must be showing substantial earnings from the production of the gusher. Owing to the remarkable output of the Palmer gusher, which has run as high as 8,000 barrels per day, the stock of the Palmer Oil Co. has been selling above par for the past ninety days, and sold as high as $1.35 prior to the declaration of dividends. The stock has since sold at $1.65 on the exchange. The declaration of four monthly dividends at one time indicates the intention of the management to pay regular dividends of two per cent per month from the large earnings of the company, which will readily permit of the payment of this dividend and leave a surplus of many thousand dollars per month. It is regarded as probable that this rate may be increased, or a special cash or stock dividend declared, as soon as all the oil that the well is capable of producing can be handled by the pipe lines.

The Palmer Oil Co. is considered one of the most remarkable properties in the State, opening, as it did, an entirely new field, with a gusher for its first well. The company controls 880 acres of land in the eastern extension of the Santa Maria field, and has its second well about completed, and the third well about half drilled. The gusher, when first brought in, was expected to yield from 500 to 800 barrels daily. At the first actual test, however, it ran at the rate of 4,000 barrels per day, and since being thoroughly cleaned out and opened up has been producing at the rate of 6,000 to 8,000 barrels per day, and at times has seriously embarrassed the company to take care of the oil. Two pipe lines have now been completed and are in operation, one by the Associated Oil Co. and the other by the Union Oil Co., both of whom have contracts with the Palmer Oil company for large amounts of oil.

The remarkable showing of the Palmer Gusher caused great activity throughout the Eastern Santa Maria field, and practically all of the surrounding land has been taken up by different companies, and drilling operations are actively under way on fifteen or twenty new wells.

LONDON PETROLEUM LEASES PIRU LAND.

Mr. M. P. Waite of this city has just concluded a lease with the London Petroleum Company of San Francisco whereby that company takes over a section of land about a mile north of Piru. The land is in Nigger Canyon and just west of the Nigger Canyon wells and between those wells and the wells of the Modelo and Harris companies in Hopper and Modelo canyons.

The lease is for fifty years and four rigs are to be erected on the property at once. Drilling is to be commenced as soon as possible.

Several of the large stockholders of the London Petroleum Company of New York City have lately been on the coast making an inspection of this and other properties in which the London Petroleum Company is interested, and it is likely that extensive developments will be carried on in the near future. The land has never been prospected but is favorably situated and it is thought that a large proportion of it is oil bearing.

Several other leases are contemplated by other companies in this immediate vicinity, and it is likely that the Piru section as well as the remainder of the Ventura County fields, already too long neglected, will soon be the scene of some very active development.—Oil Industry.

HARRIMAN IN MEXICO.

The purchase of more than four hundred thousand acres of oil land in the States of Vera Cruz and San Luis Potosi by E. H. Harriman several months ago is now explained by the authoritative announcement that the new San Antonio-City of Mexico short line of railway which Mr. Harriman and associates are arranging to build will pass through the property.

Well boring rigs are now at work upon this land, and it is expected that by the time the road is built an ample supply of fuel for all necessary purposes of the road will have been provided from the wells that are to be bored. The new road will also tap the Ebano and Furbero oil fields, which are at this time the largest producers of oil of any of the fields in Mexico, so far as developed.

In the State of Tamaulipas oil wells are being bored upon the 2,000,000-acre tract of land which is owned by President Diaz and associates. The new Harriman line will traverse this big body of land for more than one hundred miles.

It is announced that the experts who were sent to the Pacific slope region of Mexico by Mr. Harriman for the purpose of investigating the oil possibilities there, have made favorable reports upon several localities, and that well boring machinery will soon be installed at a number of points where it is thought oil will be found.

CONSTRUCTING BIG TANKS.

The Western Steel Plate Construction Company, of San Francisco, is constructing two 55,000-barrel steel tanks for the Union Oil Company at Maricopa and has the contract for doubling the asphalt refining plant of the same company at Bakersfield. The Nevada Petroleum Company is also having a 55,000-barrel tank erected at Coalinga by the same company.

RUSSIAN MARKETS.

During the month of May various fluctuations have occurred on the Baku petroleum market, and the markets, particularly for refined petroleum, are decidedly weaker than they were at the time of our last report. Refined kerosene for prompt delivery has fallen as much as two copecks per pood during the month, and each week has shown a weaker tendency. The reductions in crude and residuals are less marked, but for these products also the markets are weaker than they were at the commencement of the month. Crude oil is now quoted at 21½-22 copecks, residuals at 22-22⅛ copecks, and kerosene at 29½-30 copecks per pood for prompt delivery free on rail Baku.

It is estimated that the total production of crude for the present year will amount to something like 430,000,000 to 433,000,000 poods. There is still a reduction in the boring activity on the fields at Baku, so that it is not to be hoped that any increase in the production will take place, nor indeed, as will be seen from the estimated figures given above, is it expected that the production will be even as high as in the year 1908. Less oil will be obtainable from the Surachany field this year, because out of the crude obtained from that field a larger quantity will be consumed for drilling purposes. The reason for this lies in the fact that the oil gas, which has hitherto been utilized for drilling, is decreasing, and some of the crude produced at Surachany will have to take its place, thus leaving less to pass into the refineries.

The production of Grosnyi is satisfactory, however, and in February amounted to 4,908,201 poods, a fair increase over the previous month. Included in this quantity is 753,870 poods, which were obtained by spouters.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for "The California Derrick," by J. M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Brace for wrench-jacks, Warren B. Daugherty, San Luis Obispo, Cal., 917,928.

Oil gate, Jas G. Smith, Shippensville, and Jas. C. McGregor, New Bethlehem, Pa., 917,970.

Oil well pump, Frederick Morgenstern, McKees Rocks, Pa., 918,460.

Extracting bitumen from bitumen-bearing ore (2), Geo. M. Willis, Chicago, Ill., 918,628 and 918,629.

Pipe coupling or joint, Peter Boyd and Jno. A. Hock, Pittsburg, assignors to National Tube Co., same place, 918,954.

Apparatus for pumping oil from petroleum wells, Karel E. Ehrmann, Bajoeng Lentjir, Sumatra, 919,142.

Well pumping mechanism, Jas. T. Callanan, Parkersburg, W. Va., 919,318.

Casing or pipe wrench, Jas. C. Lafferty, Lowman, W. Va., 919,599.

Pump operating mechanism, Willy F. Siggel, Albert, Tex., 919,784.

Pumping valve mechanism, Edw. A. Stubler, Oil City, Pa., 919,792.

Pipe coupling, Austin T. Herrick, Bradford, Pa., 921,247.

Grab for pump and drill rods, Eddie P. Law, Amarillo, Tex., 921,417.

Mechanism for drilling wells, Harry R. Decker, Houston, Tex., 920,548.

Device for pulling oil wells, Lawrence J. McKinney, Prairie Depot, Ohio, 920,615.

Automatic pipe line suction valve, Herman B. Hogg, Parkersburg, W. Va., 922,142.

Drilling machine, Robert M. Downie, Beaver Falls, Pa., assignor to The Keystone Driller Co., same place, 921,680.

Automatic oil tank cut-off, Bert G. Jewell, Robinson, Ill., 921,712.

Blank for the manufacture of middle rings for pipe-couplings, etc., Geo. H. White, Oil City, Pa., assignor to S. R. Dresser Mfg. Co., Bradford, Pa., 922,990.

Process of treating petroleum sludge to produce pitch, asphalt, etc. (2), Jno. L. Gray, Elizabeth, N. J., 923,427 and 923,428.

Process of separating acid from petroleum sludge, Jno. L. Gray, Elizabeth, N. J., 923,429.

Rope knife, Harvey A. Beasley, Barlettsville, Okla., 923,482.

Underreamer, Clarence T. Mapes, Crafton, Pa., 923,677.

VACATION.

Now is the time of the year that the ever present question pervading the family council is "Where shall we go, or what shall we do this summer?" The planning and scheming period is now upon us when our thoughts turn from the sordid pursuits of city life; for man hath need of rest and he longs for the simple joys the country yields. We all wish to set aside for awhile the cares and worries of business and visit the Blessed Isles of rest and recreation.

To aid you in selecting a place for your outing or to locate your family for the summer so as to make possible the week end trips, the Northwestern Pacific Railroad, the Picturesque Route of California, has issued a book called "Vacation." This book describes the garden spots and playgrounds of California in the counties of Marin, Sonoma, Mendocino, Lake and Humboldt. You can find in this book some place to suit your fancy and your purse, whether it is to fish, hunt, swim, rusticate on a farm or visit the numerous mineral springs or resorts.

The issue of "Vacation 1909" is now ready for distribution and can be obtained from the Northwestern Pacific Railroad at the Ferry Ticket Office, the up-town office, 874 Market Street and Room 986 (general office) Flood Building, San Francisco, Cal.

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THE ESSENTIAL DRILL LINE.

Operators of success and drillers who are expert, are men who realize the importance of doing perfect work and using the best of tools and equipment to accomplish that end, quickly and with the least of expense. A very important and essential part of this equipment is the drill line which must have the following qualities: First, stability, combined with flexibility; second, flexibility itself; third, springiness or quality of letting the tools draw it out about one foot in every seven or eight hundred feet of hole; fourth, non-kinking features.

To accomplish these requirements it has been necessary for the manufacturer to carefully study the conditions of each oil field account of the process of drilling being an out of view operation, not allowing visible observation of the exact points of wear or cause of trouble, although the certain ideas and experience of each individual using a wire rope, must be given consideration.

Results of such investigation have led to the procuring of highest quality of steel wire obtainable and adaptable to the manufacture of these specific ropes, wherein extreme care must be exercised in putting them together. The first important operation of the manufacturer is testing for breaking strain, elongation, torsion, bending stress and curvature; next, exact diameters in decimal parts of an inch, lay and tension of each individual wire in each strand and lay of each strand around the hemp or manila center, which must be of the best. On these qualifications lies the responsibility of whether or not the requirements of the driller are complied with.

In these days of deep wells, a drill line is subject to more or less severe use, on account of the narrowing down of the casing as depth is attained, grating of line against the side of the casing, etc. Drill lines, to a driller, are as important in his work as steam is to make a locomotive go. Upon it depends his success or failure. Wire rope should be treated like a piece of machinery if the best service and wear is desired.

Recently there has entered into the fields of California a Special Non-Kinking drill line which fills the requisites of the driller in every way. Previous to entering these fields, it has proved its exceptional efficiency and durability in the oil fields of Oklahoma, Kansas and Texas. The initial line in Coalinga has won the praise of pioneers of that district, who claim for it, "the best line of any they have used." Such companies as the Standard Oil Co., British Consolidated Oil Corporation, Ltd., Silver Tip Oil Co., Azores Oil Co. are installing this special line.

Stiff sockets have been extensively used by drillers throughout the fields of California on account of no really meritable improved sockets having been found that would give the operator satisfactory results. A number of years back, a ratchet socket was experimented with and found lacking, giving considerable trouble through sanding up. A comparatively new invention by practical well drillers of long experience has put in appearance here, known as self-cleaning, corrugated swivel socket. It will not sand up or fail to work at any time, allowing the tools to rotate in opposite direction, and can be used for drilling, cleaning out, fishing or any other purpose. It is claimed that this socket stands motion with a five-inch stem, thirty-four feet long, making fifty revolutions a minute, at two hundred and fifty-foot depth, and can be used as a stiff socket if desired.

These improved lines and sockets can be obtained from the Western Equipment Company, 72 Fremont Street, San Francisco, who carry a complete stock.

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GOVERNMENT EXPORT REPORTS

APRIL

	1908		1909		TEN MONTHS ENDING APRIL 1908		1909	
	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Baltimore	1,597,896	118,468	2,132,384	130,707	10,625,818	961,711	19,829,501	1,394,445
Boston and Charlestown	98,672	13,208	18,201	2,599	761,044	86,801	917,321	83,184
New York	67,503,776	5,816,152	71,925,035	5,833,499	599,263,054	50,326,665	639,110,639	51,903,403
Philadelphia	38,275,281	2,688,576	33,428,622	2,132,887	404,173,991	25,852,461	368,160,410	23,430,240
Galveston	5,456	431	6,256	1,519	61,083	8,893	193,164	42,012
Sabine	4,130,172	211,187	21,551,086	788,686	61,343,745	2,445,291	137,420,039	5,320,270
San Francisco	3,087,497	137,542	8,041,286	275,614	49,817,026	2,353,221	76,295,078	3,076,234
Total	114,698,750	8,985,564	137,102,870	9,165,511	1,126,045,761	82,035,043	1,241,926,152	85,249,786

MAY

	1908		1909		ELEVEN MONTHS ENDING MAY 1908		1909	
	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Baltimore	2,591,280	166,400	3,917,125	229,814	13,217,098	1,128,111	23,746,626	1,624,257
Boston and Charlestown	354,057	13,158	80,662	7,465	1,115,101	99,959	997,983	90,649
New York	75,868,971	6,431,667	62,597,326	5,351,847	675,132,025	56,758,332	701,703,965	57,255,250
Philadelphia	38,860,024	2,440,720	31,646,798	1,954,655	433,034,015	28,293,181	399,807,208	25,384,895
Galveston	1,722	344	13,010	2,170	62,805	9,237	206,174	44,182
Sabine	7,371,006	275,864	4,975,441	199,411	68,714,751	2,721,155	142,395,480	5,519,681
San Francisco	8,864,693	301,726	6,237,261	235,918	58,681,719	2,654,947	82,532,339	3,312,152
Total	133,911,753	9,629,879	109,467,623	7,981 280	1,259,957,514	91,664,922	1,351,389,775	93,231,066

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

Amaurot	$ .70	$
Apollo	.03	.06
Associated Oil	31.00	
Associated Bonds		95.00
Brookshire	1.40	1.60
Caribou	11.75	12.00
Claremont		2.45
Daisy		.26
Del Rey		.30
Esperanza		1.60
Four		.30
Fulton	2.00	2.50
Gypsy	.23	
Illinois Crude		.26
Imperial		47.50
Junction		.70
Kern	.50	.55
Kern River		11.50
Lucile	9.50	
McKittrick		.20
Monte Cristo	2.77½	2.87½
Mountain Girl		.29
Nevada County	.30	
Occidental	.20	
Palmer		1.42
Peerless		6.00
Piedmont	.18	.27
Pinal		10.00
Producers'	2.00	
Record	3.75	
Rico	2.60	
Sacramento	1.50	
S. F. & McKittrick	23.00	
Sauer Dough		2.20
Section 25		24.00
Shawmut		.68
Sovereign	.22	
S. W. & B.	.45	
State	1.00	
Sterling		3.25
Sunset Monarch	.50	
Superior	.15	.25
Thirty-Three	2.00	
Turner		1.00
Union		105.50
Wabash		1.25
Wolverine	.20	
W. K. Oil Co.		2.87
Western Union		95.00

SANTA FE WELL WILL SOON BE A MILE DEEP.

The Santa Fe's well on Section 3, just across Kern River, is now down 4,230 feet, making it the deepest hole in the field or the county. No oil has yet been struck, though gas demonstrations are growing more frequent. The tools are still in a brown shale formation, and have been for several hundred feet.

The Santa Fe will keep drilling until oil is struck or a depth of 5,500 feet is reached.

NEW INCORPORATIONS.

The Southfield Oil Company, incorporated in San Francisco with a capital stock of $500,000, by R. H. Smith, R. R. Yates, S. E. Liddle, J. K. Lynch, and W. H. Humphrey.

The Coalinga National Petroleum Company, incorporated with a capital stock of $500,000, by A. S. Cleary, G. V. Martin, F. A. Curtin, A. S. Bacon and S. R. Bosen

The Pacific Oil & Fuel Company of Eureka, incorporated with a capital stock of $10,000 by A. C. Dauphiny, A. C. Barrett, A. I. Streeter, and L. Dauphiny.

The Boychester Oil Company, Fresno, with a capital stock of $100,000 by W. C. Rielly, A. E. Shaw, C. T. Buss, J. B. Derructte, and S. R. Adams.

The Clovis Oil Company, Fresno, with a capital stock of $100,000 by C. E. Boyd, I. S. Knight, T. W. Pond, A. G. Ehman, and L. L. Eversoll.

The Fifty-Seven Oil Company, San Francisco, incorporated with a capital stock of $500,000 by W. N. Drown, J. F. Leicester, V. C. Osmont, F. S. Thompson, C. N. Black, T. W. Ransom, and J. H. Follis.

The M. P. Oil Company, Bakersfield, incorporated with a capital stock of $21,000 by W. B. Robb, D. E. Morgan, E. T. Powell, S. W. Marsh, M. P. Flickinger, and A. S. Crites

The Tracy Oil Company, Stockton, has been incorporated with a capital stock of $500,000 by A. Graunauer, A. H. Linne, H. P. Ludwig, J. W. Brichetto, D. A. Ball, A. G. Ball and others.

The Monticello Oil Company, Santa Ana, incorporated with a capital stock of $1,000,000 by J. E. McDonald, H. P. Oates, K. A. Snyder, and J. B. Merrill.

The Hartford Oil Company, San Francisco, incorporated with a capital stock of $500,000 by C. A. Hooper, D. McDuffie, L. Titus, R. McDuffie, and W. Havens.

The Palmer Junior Oil Company, San Francisco, has been incorporated with a capital stock of $2,000,000 by A. Raymond, A. M. Moore, L. Oppenheimer, H. H. Hart, and Aaron Sapiro.

The Kern Star Oil Company, Los Angeles, incorporated by Greeley King, Francis Smitheram, F. W. Mattern and others.

The White Light Oil Company has been incorporated at San

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Francisco with a capital stock of $10,000 by L. L. Dumme, C. P. Fonda, and E. R. Sullivan.

The Sunset Acme Oil Company has been incorporated at Bakersfield with a capital stock of $200,000 by H. W. Thomas, T. M. Young, and H. E. Wright.

The Stauffer Oil Company has been incorporated at San Francisco with a capital stock of $100,000 by C. d'Guigne, John Stauffer, P. de Tristian, W. Bork, and R. M. Lyman.

The St. Elmo Oil Company has been incorporated in Fresno with a capital stock of $500,000 by R. C. P. Smith, Harry Jackins, G. W. Henderson, J. T. Cleary, and B. L. Oliver.

The Twenty-three Oil Company has been incorporated at Bakersfield with a capital stock of $500,000 by H. E. Wright, H. W. Thomas, W. H. Morris, T. M. Young, and W. B. Beaizley.

Articles of incorporation for the Producers' Transportation Company, which will handle the oil of the independent producers of Kern County and Coalinga, have been filed at Bakersfield. The company is capitalized for $7,000,000, and the directors are: L. P. St. Clair, S. W. Morshead, W. W. Welsh, M. V. McQuigg, Thos. O'Donnell, L. W. Andrews, and W. B. Robb. Bakersfield is the principal place of business.

Kern Four Oil Company; capital stock $100,000; by H. F. Brown, H. P. Taylor, L. R. Works, J. D. Works, and A. M. Williams, of Bakersfield.

Security Oil Syndicate, of Anaheim; capital stock $240,000; by J. E. McDonald, H. P. Caotes, K. A. Snyder, J. B. Merrill, and I. L. Gates, all of Los Angeles.

Beacon Oil and Gas Company, of Corning; capital stock $200,000; by Charles Hughes, C. L. Cofer, J. B. Reese, and W. A. Fish, of Red Bluff, and H. M. Owens, of San Francisco.

Minoru Oil Company; capital stock $500,000; by A. L. Weil, M. Syme, Jessee Mueller, and William E. Eckhoff, of San Francisco, and E. B. Davis, of Oakland. Place of business, San Francisco.

MONTHLY STATEMENT OF DIVIDENDS PAID BY LISTED OIL COMPANIES TO MAY 31, 1909.

(As Posted on the Blackboard in the Board Room of the Exchange, 339 Bush St.)

Company	No. of Div.	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	12	Sept. 22, 08	.03	$ 11,400.00	$ 136,800.00
Amalgamated Oil	22	May 10, 09	1.00	50,000.00	1,100,000.00
Apollo	2	Mar. 20, 05	.01	2,000.00	4,000.00
Assoctd. Oil Co.	4	Mar. 1, 07	1.50	420,000.00	1,522,309.39
Brookshire	37	May 1, 09	.02	10,000.00	382,500.00
Caribou	49	May 15, 09	.25	20,175.75	498,774.24
Chicago Crude	2	Mar. 25, 07	.00½	5,000.00	15,000.00
Claremont	48	May 28, 09	.01	4,500.00	224,000.00
Coalinga Pacific	13	May 26, 09	.07	4,550.00	76,050.00
Columbia	26	May 25, 09	.00½	4,996.31	209,844.84
Esperanza	19	May 26, 09	.01	1,600.00	30,250.00
Euclid	27	May 1, 09	.01	3,500.00	89,000.00
Four	63	Apr. 26, 09	.01	3,000.00	198,000.00
Globe	17	Apr. 1, 09	.01	6,000.00	63,000.00
Hanford	30	Jan. 30, 06	2.00	4,000.00	80,000.00
Home	A7	May 20, 09	.02	2,000.00	454,000.00
Homestake	37	Oct. 1, 08	.10	1,000.00	69,250.00
Illinois Crude	27	May 1, 09	.02	4,000.00	64,000.00
Imperial	64	Apr. 6, 09	.60	60,000.00	1,760,000.00
Junction	7	May 1, 09	.01	2,500.00	17,500.00
Kern River	39	Feb. 3, 09	.10	2,000.00	98,000.00
Linda Vista	14	May 5, 09	.01	3,838.50	49,900.50
Lucile	11	May 10, 09	.10	2,670.40	29,374.40
Monte Cristo	53	Aug. 10, 07	.01	5,000.00	265,000.00
Nevada County	3	Oct. 13, 08	.04	10,000.00	40,000.00
Peerless	73	May 20, 09	.06	6,000.00	777,000.00
Piedmont	5	May 5, 09	.01	3,890.00	19,097.30
Pinal		May 5, 09	.15	22,500.00	729,841.00
Pittsburg	10	Nov. 11, 07	.24½	58,800.00	124,800.00
Reed Crude	9	Nov. 08	.06	6,000.00	1,107,000.00
Rice Ranch	8	Aug. 20, 07	.03	9,000.00	69,000.00
Royalty	6	May 10, 09	.03	600.00	3,800.00
S. F. & McKittrick	12	May 1, 09	.30	15,000.00	165,000.00
Sauer Dough	39	May 26, 09	.05	9,975.00	389,025.00
Sovereign	14	Apr. 1, 09	.01	5,000.00	75,000.00
Sterling	19	Mar. 15, 09	.25	62,500.00	559,500.00
Superior	8	Apr. 13, 09	.01	5,000.00	40,000.00
S. W. & B.	3	May 10, 09	.01	3,770.00	26,390.00
Thirty Three	57	Apr. 6, 07	.30	30,000.00	640,000.00
Union	154	May 25, 09	.50	117,711.00	5,127,227.15
United Petroleum	93	May 25, 09	.50	40,375.50	1,775,204.93
Wabash	17	May 18, 09	.01	3,000.00	90,000.00
West Shore	47	Dec. 21, 08	.05	5,000.00	235,000.00
Western Union		Dec. 15, 07	2.00	20,000.00	484,951.00

Total Dividends Paid to Date.....$19,914,389.75

Total dividends paid by the above companies for May, 1909, $337,152.46.

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Last year oil was most valuable of California's mineral products. This will be increased this year, and for many years to come.

We have men associated with us who have spent ten (10) years in the oil fields of California. With their aid we are publishing the OIL BOOK, which contains full information of the various oil fields and oil companies. We have also published a little booklet, giving the history of the oil industry.

We handle all good California oil stocks, and can tell you how best to invest in these companies. Whether you want to invest in ten (10) or ten thousand (10,000) dollars we can surely be of assistance to you.

We advised the purchase of Templor Ranch at ten (10) cents per share, now worth twenty (20) cents; San Francisco and McKittrick at thirteen (13) dollars, now worth twenty-seven (27) dollars; Monte Christo at ninety-five (95) cents, now worth two dollars and seventy cents ($2.70).

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., July, 1909 No. 3

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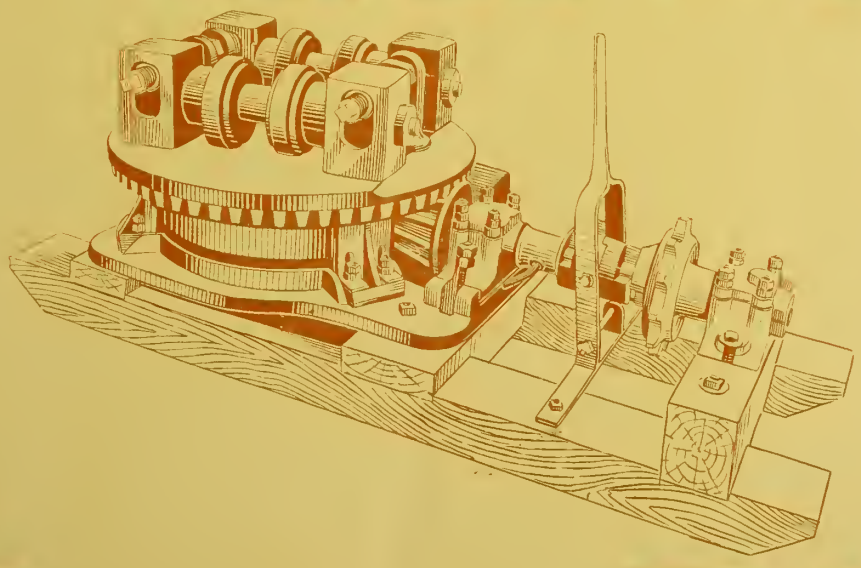

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., July, 1909 No. 3

CALIFORNIA PRODUCTION SHOWS BIG INCREASE

A careful estimate of the production of California for the first half of the present year brings the total to approximately 27,400,000 barrels. The production of January was 4,180,165 barrels, and for the month of June 4,800,000 barrels. This is at the rate of 54,800,000 for the year, but should there be a proportionate increase for the next six months the production will be close to 60,000,000 barrels. It seems that there is now a tendency in the Coalinga field to keep the production around the present rate for a time at least, but should the wells now drilling in deep territory come in as others have in the past six months, arbitrary action will have to be taken in order to do this. No material reduction is looked for in this field, however, for sometime to come. It is probable that the Coalinga production will not stop until it has reached 2,000,000 barrels a month.

The Kern River field is showing a steadiness unlooked for by those who have anticipated a reduction in production. In the northern portion of the field considerable new work is being done with good results, and the air compressor has materially increased the output in the main field. So long as fair results are attained in the outskirts of the present proved territory Kern River will likely maintain its present approximate output.

The big increase in Kern County must, after all, be found in the Sunset, Midway and McKittrick fields, as a vast amount of drilling is in progress in these three fields. Some of the new wells expected shortly will undoubtedly add materially to the output. Before the end of the year these fields will have made very rapid strides, as there will undoubtedly be a plethora of new wells within the next six months. Scores of wells are being drilled and new operations planned that will test the fields thoroughly and define to a large extent the limits of the productive territory; that is, if those on the far edges should happen to develop dusters, a contingency as now unlooked for.

The Ventura field is undergoing a sort of a resurrection, and many new people are getting into this old and favorably known district. A large amount of capital has been invested in the past three months by various syndicates, and many wells will be started shortly. Ventura seems to be on the verge of great activity. This field has been somewhat neglected of late, owing to the extensive development of Coalinga, Sunset, Midway and McKittrick fields, where efforts have been largely concentrated for the past year, since the oil business has received its great impetus.

The Santa Maria field shows a slight falling off in production, due principally to conditions outside that effect the marketing of the oil, but not from lack of oil to bring to the surface. Santa Maria will not be behindhand when proper transportation facilities are provided to handle the production.

GOVERNMENT PREDICTION ON PETROLEUM SUPPLY

The report of the National Conservation Commission of 1908, showing the reckless manner in which our natural resources are being wasted, finds an echo in a bulletin (No. 394) just issued by the United States Geological Survey, in which are reprinted the papers on mineral resources contributed by members of that Survey to the conservation report. The data on which these papers are based were not obtained especially for the occasion, but were taken from the files of the Survey, where they had been accumulating for years. Taken together, they present a state of affairs that may well awaken reflection.

Coal.

Coal is considered first, and it is shown that waste in mining loses forever about one-half as much as is marketed. This half is either left in the ground in thin beds or in the shape of pillars to support the roof. Coal has been extensively mined in the United States for not much more than half a century, but the consumption is increasing so enormously that if this increase should continue all the easily accessible coal would be exhausted by the year 2040, and all coal by the middle of the twenty-first century. It will, of course, not continue at such a rate, for the increasing scarcity will raise prices and check consumption. Water power, too, will undoubtedly largely take its place.

Petroleum and Natural Gas.

With regard to petroleum the situation is a good deal more serious. Petroleum has been used for less than fifty years, and it is estimated that the supply will last only about twenty-five or thirty years longer. If production is curtailed and waste stopped it may last till the end of the century. The most important effects of its disappearance will be in the lack of lubricants and in the loss of illuminants. Animal and vegetable oils will not begin to supply its place. This being the case, the reckless exploitation of oil fields and the consumption of oil for fuel should be checked.

In natural gas the waste is enormous; 1,000,000,000 cubic feet are estimated to be wasted into the air every twenty-four hours. The gas supply will last about twenty-five years—about as long as it has already been utilized.

OIL ADVANCE IN TEXAS.

The Texas Company has been awarded the contract for furnishing oil to the various eleemosynary institutions of the State of Texas for the next fiscal year by the State purchasing agent. This contract is for crude petroleum. The price for the oil for all Austin institutions is $1.14, for the State Orphans' Home at Corsicana, 99 cents, for the Southwestern Insane Asylum at San Antonio, $1.15, and for the North Texas State Insane Asylum at Terrell, 99 cents. This is quite an increase in the price paid by the State last year. The above figures include freight, that is, the oil is sold delivered. The price paid last year ranged from 82 cents to 87 cents per barrel.

NO DANGER FROM MEXICAN COMPETITION.

A contemporary states that, "if oil is found on the west coast of Mexico, it will be of a high gravity—as it is has been demonstrated that the further south the fields extend the lighter the oil." Facts do not prove this contention, as the highest gravity of oil produced in California is found at Half Moon Bay, which is of 52 gravity. Again, in Santa Barbara County, the next highest gravity oil is found that is highly regarded for its refining quality. Within a short distance is found the heavy oil of Arroyo Grande, which is suitable only for the manufacture of asphaltum. Then, again, at Summerland, further south, is found an oil as low in gravity as the Arroyo Grande. We next have the Ventura and Orange County oil fields that produce a high-gravity oil that is used exclusively for refining.

If oil is ever found on the west coast of Mexico, it is most likely it will vary in gravity in about the same manner as in California. There are no evidences to guide one as to the character of oil, whether it is of low or high gravity, even though oil should be found in paying quantities in this region.

For these reasons and the further fact that oil has not yet been discovered in material quantities scattered over any great area, there is no apparent reason why California producers should fear any portion of Mexico as a competitor in the markets of this or any other country.

The fuel problem in Mexico is far more serious than in California and it will be many years, according to present indications, before the supply will equal the local demand. Aside from the railroads of Mexico, ore smelters, situated at Monterey, Aguas Calientes, Torreon, and other points, have already been in the market and have made bids for fuel oil much higher than the price paid by the railroads.

The Tehuantepec railroad obtains its fuel oil from Oklahoma exclusively, being unable to secure any of the local output. Other lines are burning fully one-half coal. It would surprise railroad men in California to learn that the Mexican crude oil requires a temperature of not less than 175 degrees of heat before it can be used as a fuel.

Another feature of the oil is that it contains water that no known process, except electrical, which has never been tried extensively, is able to separate. Locomotives on the national lines have died in the middle of a division on account of excess of water. The Mexican Petroleum Company does not burn its own oil in the crude state. The crude product is passed through a "splitting" process at their refinery at Ebano and the lighter product is piped to the fields and is distributed to the wells and is used direct without the use of fuel tanks, as the heavy gravity of the oil prevents them from piping it in the usual manner.

AUSTRIAN OIL CONTRACT WITHDRAWN.

A dispatch from Vienna states that the Austrian oil producers have withdrawn the contract whereby the Standard Oil Company would have largely controlled the Galician petroleum industry. It appears that the ministry of finance has undertaken to build reservoirs and lease them to the oil men at rents much less than those demanded by the Standard Oil Company. Moreover, the home refiners will escape the handicap of the heavy rebates on the price of the raw product which the Standard was to have enjoyed under the contract now canceled.

The government expresses the hope that competition will be sharpened through the abrogation of the contract, but it is probable that a lively fight will follow for the export trade, which vitally affects the Standard's position in Germany.

The Vacuum Oil Company, which is the Austrian branch of the Standard Oil Company of the United States, acquired the controlling interest in the largest oil transport and storage company in Galicia in October, 1907. In February, 1908, the Standard Company introduced tank wagons, which purveyed its product direct to the storekeeper, thus eliminating the wholesalers. The company began a campaign of purchasing the holdings of all the wholesale concerns in the country districts. The Vacuum Company was organized in 1903 and never has paid a dividend. The original capital of $10,000 was gradually increased until it reached $3,000,000, with the announcement that it soon would be raised to $4,000,000. A special cable dispatch to the Chicago "Daily News," June 10, 1909, declared that the Austrian press and public were incensed over the news that the Standard Company was in absolute control of the Austrian petroleum industry. A contract which had been completed between the Galician oil producers and the Standard Oil Company appeared to give all the advantages to the Americans. A part of the agreement was that the Standard was to construct reservoirs at a cost of $1,000,000, which it would get back in four years in rentals. The contract further bound the producers to furnish the Standard Oil Company with 150,000 tons of raw oil annually.

WORLD'S PETROLEUM PRODUCTION.

The world's petroleum production during the past three years appears to have been about as follows: United States, 1908, 180,000,000 barrels; 1907, 166,000,000 barrels; 1906, 125,000,000 barrels. Russia, 1908, 52,500,000 barrels; 1907, 62,000,000 barrels; 1906, 60,500,000 barrels. Galicia, 1908, 11,000,000 barrels; 1907, 8,000,000 barrels; 1906, 5,500,000 barrels. Roumania, 1908, 8,000,000 barrels; 1907, 8,000,000 barrels; 1906, 6,500,000 barrels. Sumatra, Java, and Borneo, 1908, 16,000,000 barrels; 1907, 10,000,000 barrels; 1906, 10,000,000 barrels. India, 1908, 4,500,000 barrels; 1907, 4,000,000 barrels; 1906, 4,000,000 barrels. Mexico, 1908, 4,000,000 barrels; 1907, 2,000,000 barrels; 1906, not reported. Sundries, 1908, 2,000,000 barrels; 1907, 2,000,000 barrels; 1906, 2,500,000 barrels. The totals being, 1908, 278,000,000 barrels; 1907, 262,000,000 barrels; 1906, 214,000,000 barrels, from which it will be observed that the production of the United States continues the dominating factor. Petroleum deposits are being sought for in various countries, and recent discoveries in Persia seem likely to prove important.

PETROL BUTTER IS THE STANDARD'S LATEST.

A special from Alton, Ill., on July 11, says:

The first roll of petroleum butter, the Standard's latest product, is to be turned out at the Wood River refinery near Alton. Preparations are being made to manufacture the product and the machinery has been shipped here. The new product will be known as petrol butter. It is said to be of the same consistency as lacteal butter, but brown in color. It lasts a great deal longer than real butter, it is said, and does not become rancid.

OIL-BURNING LOCOMOTIVES IN MAINE.

We doubt if the owners of wild lands in Maine will have to organize very extensively or to use any great pressure to induce the railroads of Maine to use oil-burning engines on railroad lines running through the heavily wooded sections of the State where forest fires are likely to rage, says the Lewiston "Journal."

Certainly they will not have to use any great pressure against the Maine Central railroad, provided the experiment now being made on the Rumford Falls-Rangeley branch of the Maine Central is an economic success. A few months ago oil-burning locomotives were put on this line. At first they had their troubles, but a few weeks ago, as the Lewiston "Journal" said at that time, these engines began to run successfully, performing mechanical marvels in steam production and making time.

There is no question that sparks from locomotives are the one great source of forest fires in Maine. The damage from forest fires is enormous. Undoubtedly the heavy fires between Bath and Brunswick came in some instances from locomotive sparks. The time will come, therefore, when as self protection Maine roads will be equipped either with electricity or with oil-burning engines. If the wild land owners proceed along the lines of the mutual interests of the railroads and themselves, they will doubtless succeed quite as well they will if they undertake a general campaign of compulsion. In other words, we believe that the railroads of Maine are now ready to meet the lumbermen more than half way.

HIGH-GRADE OIL IN VENTURA COUNTY

With a greater demand for our oil production, and consequent higher prices, as well as greater effort to increase the output, comes the question of the value of oil based on its relative specific gravity. In past years, "oil was oil," as a rule, except in a few fields which produced a very high gravity oil, which has invariably been taken in preference to all other and which invariably has brought higher prices.

Until about two years ago, the production of California exceeded the demand and the refiners could secure a plentiful supply of oil of a gravity above 20° or 22° Baume. The price at that time ranged from about 18 cents a barrel in the interior fields to above 75 cents in the fields producing the higher gravity of oil, the latter being always purchased in preference over all other on account of its greater percentage of volatile properties and decreased cost of refining.

The gravity of the oil produced in the State of California ranges from about 8° Baume to above 50° Baume, and the percentage of volatile oils (gasoline, kerosene, etc.) from almost nothing to as high as 65% in the higher gravities. The value of the by-products taken from a barrel of each varies from a few cents to as much as $4.00. It will, therefore, be seen that the security of the investor lies as much in the quality as in the quantity of the production of the wells.

In Pennsylvania, oil wells are being pumped at a profit which produce no more than three or four barrels a day. The oil is from 30° to 50°, and the best qualities of by-products are obtained therefrom. Sometimes a dozen or more wells are pumped from a single power plant by the use of a device known as a pumping jack, but this method of economy has been little used in California thus far.

A particular illustration of the greater profits to be secured from the refining of high-gravity oils is that of six wells in Unita County, Wyoming, having a total production of but a few thousand barrels a year, which were made to pay a nice profit on a considerable investment. The oil was above 40° B. gravity, and the production was refined in a local refinery, which was owned by the same people who operated the wells.

Ventura County, California, produces some of the highest gravities of oil in the State. Chemical analysis of one sample, 35.1 B., shows the following percentage of by-products, which, at market values, wholesale, would amount to the sum set opposite each, and the total wholesale value per barrel, i. e.:

15.3%	gasoline, at 15c per gal	$0.949
15.0%	benzine, at 10c per gal	.630
9.5%	eng. dist., at 8c per gal	.309
9.9%	kerosene, at 9c per gal	.374
38.6%	fuel oil and asphalt, at 90c per bbl	.162
1.8%	loss in refining	
		$2.424

Here is a comparison. Take 26.5° B. Coalinga oil and it will be found that the value of the by-products obtained by distillation are as follows:

7%	gasoline of 66° B., at 15c per gal	$0.441
3%	benzine of 58° B., at 10c per gal	.126
4%	engine dist. of 52° B., at 8c per gal	.134
25%	kerosene of 41° B. (less 15% loss), at 9c per gal	.801
59%	fuel oil of 16° B., at 90c per bbl	.531
2%	loss in distillation	
	Selling price per bbl	$2.033

The above table was compiled by one of the foremost chemists of the State and shows concisely that there will always be the greatest demand for the highest gravity oil and that the same will always command the highest prices.

The production of oil in the Eastern States has fallen off greatly in the past few years and refiners are depending more and more on California's production to meet their requirements. Every barrel of high-gravity oil is being consumed, and so great is the demand that oil of as low a gravity as 16° B. is being refined in lieu of the more desirable product.

In the early days of the California oil business, the refined products were entirely consumed in the local market. At the present time they are shipped to practically every part of the globe, tank steamers, with a capacity of more than a million gallons each, transporting the same to China, India, Japan, and other foreign countries, while coastwise vessels supply the entire Pacific Coast. The business is growing by leaps and bounds and refiners are eagerly seeking every barrel of refinable oil and the market advancing.

The future of the State's greatest industry is assured, and the refining of oil will continue to be one of its greatest factors. The production of refining oil is falling off in every oil-producing State except California, and the increase in this State, while material, will hardly be sufficient to make up the deficiency. As an illustration of the shortage of oil and the great possibilities of immense profits to be derived from an increased production, we will point to the 20,000-barrel daily capacity refinery at Oil Port, near Fort Harford, which has not been operated since it was constructed, two years ago, on account of being unable to secure enough refining oil to run the plant, even to half of its capacity.

AUBURY'S REPORT FOR 1908.

The report just issued by State Mineralogist Lewis E. Aubury shows that the State produced in 1908 48,306,910 barrels, with a valuation of $26,566,181. The production came from eight counties, with Kern in the lead with 18,777,871 barrels, with a valuation of $9,388,938. The value of petroleum exceeds that of gold by about $6,000,000.

By counties, the production was as follows:

	Barrels.	Value.
Kern	18,777,871	$9,388,938
Fresno	10,725,389	5,898,964
Santa Barbara	8,847,589	4,423,794
Los Angeles	6,244,347	4,082,052
Orange	3,376,689	2,532,517
Ventura	289,625	217,219
Santa Clara	35,400	17,700
San Luis Obispo	10,000	5,000
Total	48,306,910	$26,566,181

Asphaltum showed a valuation of $1,082,376; bituminous rock, $109,818; natural gas, $474,584.

This is an increase of 8,000,000 barrels of oil over the year 1907, with an increase in value of about $10,000,000. The production of the State for the year 1908 was more than 20 times that of 1898, when the production was 2,249,088 barrels.

PIPE LINES AND RUMORS OF PIPE LINES IN THE EAST.

A permit has been granted the Prairie Oil & Gas Company by the interior department to lay a pipe line over Indian lands from the Glenn pool to the Arkansas State line, says the Oil Investor's Journal. Men are in the field taking right of way over private land. County commissioners have given permission to the company to lay its line along the public roads. Apparently things are being gotten into shape so that whenever the word is given the company will be ready to begin laying the pipe. The work now being done, while preliminary, is as much a part of the pipe line, or as necessary, as the actual construction. So it may be said that the Prairie is already moving with the proposition.

Construction on the south end started last month. Some five miles have been laid from the station at Cut-off switch, near Shreveport, north toward Uni. Steel tanks are being built at Cut-off. Twenty miles of 8-inch will eliminate the gap between Cut-off and Uni. It is only a mile or two from Uni to production in the Caddo field, the nearest wells being in section 10-20-15. A short lateral will reach the field, and the Standard will have storage ready at Cut-off for its Caddo runs.

Work is progressing rapidly at the refinery site, north of Baton Rouge. Pending the completion of the pipe line, crude will be shipped in tank cars from Oklahoma and Caddo to storage at Baton Rouge. The Standard has bought 65 acres of land at Chalmette, south of New Orleans for a fuel oil

storage and distributing station. There is a steel tank on the property, built for the New Orleans Terminal Company, but never used. The Standard will go after the rich fuel oil business in the lower Mississippi Valley with all the energy that is characteristic of its operations. The Prairie Oil & Gas Company has many millions of barrels of crude in storage in Oklahoma, and it seems reasonable that this will be drawn on to supply the Baton Rouge refinery, rather than oil fresh from the wells. When this refinery gets going at full capacity it will handle 15,000 to 20,000 barrels a day of crude, a large proportion of which will go into fuel oil. There is a market in Louisiana for 10,000 to 15,000 barrels a day of fuel oil, and the Standard will be in a peculiarly advantageous position to supply it. The present production of crude in Louisiana is less than 9,000 barrels a day, of which perhaps 1,500 barrels a day from the Caddo field is reserved for refining. The net production of the Jennings field, after deducting fuel consumption on the field, is not much over 4,000 barrels a day, leaving less than 7,000 barrels a day of crude in the entire State, available for commercial fuel consumption. With an adequate supply of Oklahoma crude the Standard will be in the same position that The Texas Company is in at Dallas, where its refinery, located on its Oklahoma-Texas trunk line, turns out 7,000 to 8,000 barrels a day of residuum and gives The Texas Company an advantage in the North Texas fuel oil market that cannot be overcome.

One of the great drawbacks to the fuel oil trade in Louisiana has been the fluctuation of the crude oil market. Neither selling companies nor consumers have been willing to contract for a period longer than one year because the price in the fields has been subject to sudden advances and declines, governed by shortage or surplus of supply. It is considered reasonably certain that the Standard will offer fuel consumers long term contracts. This is what the fuel consumers want, if they can get oil at a figure which will make it more economical than coal from the comparatively nearby mines of Alabama and Tennessee.

It is believed that The Texas Company's move, in preparing a refinery site at Shreveport, on the Red River, is to put itself in position to compete on an even basis with the Standard for the Louisiana fuel and refined oil business. A similar move by the Gulf Refining Company, although it may not take the same form, is to be expected. The Texas and Gulf companies now have most of the Louisiana fuel oil trade.

Still Another Pipe Line.

Various rumors as to another Oklahoma-Texas pipe line have been given space in the newspapers of late. Some of these credit the Higgins Oil & Fuel Company with having plans to lay such a line. Others have it that this company will go into a combination to buy the Waters Pierce Oil Company's business when it is offered for sale by the State receiver, and that it will also take over the refinery of the Security Oil Company at Beaumont. President C. L. Wallis has denied the rumors, and no one on the ground believes there is anything in any of the stories as to the Waters Pierce and Security. However, it has been known for some time that another line is under consideration by interests represented in various companies, and it is regarded as certain that the line would take form if a contract could be made with the Security Oil Company to take a supply of Oklahoma crude through such a line for a term of years. The Security Company does not care to make a contract so long as the State's suit is hanging over its head. It has been getting its oil by tank car and from the two lines now in operation from Oklahoma. Its last contract for 300,000 barrels from The Texas Company, delivered at 76 cents, is about completed.

It is conceded that the gentlemen who are considering the third Oklahoma-Texas line could raise the money, once they decided to carry the projects through. Mr. Wallis of the Higgins Company, Captain W. C. Tyrrell of the Heywood Oil Company —both companies having production in the Glenn pool—and W. S. Davidson, president of the First National Bank of Beaumont, a director of the Higgins Company, and brother of Attorney General Davidson, have had the matter up for several months past. E. R. Kemp, representing Jennings Brothers and, indirectly, the Pure Oil Company, in the Oklahoma field, is a director of the Higgins Company. His companies have a large production and much oil in storage in Oklahoma. The Heywood Oil Company has 400,000 barrels in storage in the Glenn pool. It is understood that J. E. Crosbie, representative of the Dutch interests in the Oklahoma field, has discussed the pipe line proposition with Messrs. Wallis and Tyrrell, and it is said, not authoritatively, however, he has indicated that the Dutch would be willing to go into the thing. His people are reported to be lined up with the Royal Dutch Company, which has ample resources to put through anything it undertakes, and thy have large holdings in the Glenn pool, and a considerable quantity of oil in storage in the field. It would be advantageous to all the various interests represented by Messrs. Wallis, Tyrrell, Kemp and Crosbie to have an outlet to seaboard for their oil. Estimates of the cost of an 8-inch line have been made, and the figure is put at $6,000,000.

In order to provide increased facilities between Humble and Sour Lake The Texas Company will immediately duplicate the present 6-inch line between these points, covering a distance of 52 miles. Deliveries through the 8-inch trunk line from Oklahoma have recently been increased as a result of the construction of loops north of Dallas. The 8-inch line terminates at Humble and from that point to Sour Lake the company now has one 6-inch line. The new line will double the capacity at the south end.

FIFTY YEARS OF PETROLEUM.

On August 28th next will occur the semi-centennial of petroleum—most valuable of the mineral resources of California. It was on August 28, 1859, on Oil Creek, Pa., that the primitive drill of Col. Edwin L. Drake, when 69½ feet down, broke into a thick fluid and the first petroleum well in the world spouted oil.

In 1908, only forty-nine years later, the crude oil production of the United States alone was 183,181,084 barrels, worth $134,000,000. During that period discovery and development of petroleum fields have progressed in Europe and Asia, as well as in America, but the United States still furnishes about two-thirds (64 per cent) of the world's petroleum, and yearly exports about $100,000,000 worth.

The principal foreign customers for American petroleum are Great Britain, Germany, China, Netherlands, Japan, British East Indies, Brazil, Belgium, British Australasia, France, Argentina, Canada, British Africa and Italy.

By fields the 1908 production was

Field.	Barrels.
California	48,306,737
Midcontinent	46,488,432
Illinois	34,019,708
Appalachian	25,053,810
Texas and Louisiana	16,906,850
Lima (Ohio)	10,005,547
Other States	400,000
Total	181,181,084

In fifty years petroleum from industrial and commercial non existence has risen to fourth place in the natural and manufactured products of the United States. Its volume and value are surpassed only by foodstuffs, cotton and iron and steel. In its production, conversion for use, and home distribution (outside of railway and ship transportation) over 100,000 men are directly engaged, and the great overturn and redistribution of capital shows how important the industry has become.

Until 1876 oil production was only in the Pennsylvania field, followed by Ohio, West Virginia and California. In 1883 production began in Kentucky and Tennessee, and in 1887 in Colorado. The year 1889 brought Illinois, Indiana, Kansas, Texas and Missouri into line, Oklahoma in 1891, Wyoming in 1895 and Louisiana in 1902. Very rich results followed the Illinois and Oklahoma openings. Later came the enormous increases in California's yearly outputs, still expanding.

The new wells driven in 1908 were:

Pennsylvania field	6,915
Illinois	3,574
Midcontinent	3,407
Ohio field	848
Gulf coast	827
California	641
Indiana	402
Total new wells	16,614

In Asia Burma produces much oil and it is protected over all India by an import duty, yet, as a New York Sun writer says, after carrying American oil across two oceans we have, by superior methods, been able to sell it in India ($5,097,861 worth in 1908) as well as in China, Japan, Java and Australasia. American oil is also delivered at the doors of the peoples of Europe and Africa. Every year the struggle furnishes its quota of battle and victory in one quarter or another of the globe. American oil also competes successfully in other countries against the duty protected oil of Russia and the shale oil of Scotland, in spite of the added cost of ocean transportation.

MEXICO.

The development by S. Pearson & Son's oil field department in the Macuspana District, Camp Sarlat, State of Tabasco, has proven a disappointment to the promoters. Eleven holes had been sunk and Nos. 3 and 11 were producing, the former at the rate of a few barrels a day and the latter promised a good yield of oil testing 43 gravity. In setting the strainer, it seems, the No. 11 was lost. No. 12, the well upon which the field's future largely depends, has been in trouble three different times and the company is now changing from rotary to cable tools.

A recent statement by the sub-secretary of communications and public works, to the effect that the government did not intend doing anything with the Frontera bar at the present time is taken to indicate that the Sarlat Camp prospects are very poor. It would be necessary for tank steamers to cross this bar in entering the Usamacinto River and the Macuspana River, or Grijalva, in reaching the field or proposed pipe line terminus. When No. 11 came in shortly after the first of the present year, government engineers immediately took up the work of surveying and charting the bar and rivers. When No. 11 played out and No. 12 offered so much trouble, the above statement was made by the sub-secretary of the department.

The crude being used at the Minatitland refinery of the Pearsons comes exclusively from San Cristobal via pipe line, a distance of about ten miles. There are fourteen producing wells, several drilling, and four geologists in the field making new locations. This San Cristobal crude is very rich in asphaltum.

John B. Body, head of the Pearsons in Mexico, is quoted as saying that the fight against the Waters Pierce people would be taken up in earnest and orders have been received at the Minatitlan refinery to rush the output of illuminating oil for the Mexican market. During June shipments by rail amounted to an average of eight cars (4,000 cases) daily. The daily production of all grades figured 1,500 barrels. Fuel oil for the Mexican railway is being handled via pipe line to Puerto Mexico, then by tank steamer to Vera Cruz.

At the expiration of the present contract between the Tehuantepec National Railway and The Texas Company for 100,000 barrels of fuel oil, the new contract will be made, it is said, with the S. Pearson & Son oil field department for fuel oil from the San Cristobal field. No. 1 hole at Concepcion gave about 16 barrels per day, mostly salt water, and the field was temporarily abandoned. When A. Stoop, a geologist from the London office of the Pearsons, arrived in Mexico in November to head a six months' expedition through the states of Veracruz, Chiapas, and Tabasco, he visited the Concepcion field and selected a site for No. 2 about five hundred yards from No. 1. About seven weeks ago No. 2 came in a gusher with estimated capacity 2,000 barrels daily. The hole was immediately plugged and awaits the completion of the pipe line to the refinery. This is said at the refinery to be the best oil Pearson has in the State of Veracruz and compares favorably with the crude from No. 11 well in the Sarlat camp, Macuspana District. The Concepcion oil is rich in lubricants and contains little if any asphaltum. San Cristobal oil shows practically no lubricants. Ten wells are drilling at Concepcion and surveys have been made for the pipe line to Minatitlan.—Oil Journal.

SECTION SIX HAS ANOTHER BIG WELL.

The Coalinga Aladdin, on Section 6, was just put on the pump Thursday afternoon and from present appearances it will develop into the biggest producer on the section. With 1,700 feet of water standing in the hole, the well exhibited a heavy gas pressure which intermittently forced a fine showing of oil to the top. It will take several days yet to clear the hole of water and work out a reservoir at the end of the casing. Yesterday morning, after pumping progressed all night, the well showed up much better. It was visited by a large number of operators, all of whom agreed that it will be the banner well of the section when finally finished up.

Zed Phelps, who held the contract for the drilling, declares it is showing up better than the Amy, which began in a sensational manner.

"Of course it will take several days yet before we get the water off and get the well going good," said Phelps yesterday morning, "but from the way it is acting this morning, I do not hesitate in saying it will be the best well in this section. It shows up better than the Amy did."

Every condition is favorable for a big well. It was finished up in six-inch casing, which is the biggest on the section. It is in ninety feet of oil sand and 60 feet of the casing was perforated. In other wells on the section, which thus far have not given a production, the perforated pipe is of greater length which, it is supposed, causes the sanding up, now being combatted against, by the heavy gas pressure from above.

With the shorter perforated length, it is hoped to do away with this drawback in the Aladdin. The well is 2,582 feet deep. Construction of the derrick began February 1st and spudding in twenty days later. The 6¼-inch casing was landed July 15th and the well was put on the pump July 22nd.

Burr Brothers are financing a new company which is beginning work on a new property in the south field this week. They have organized the Consolidated Oil Company of Coalinga, for the development of lots 1 and 2 and 5 and 6 in Section 18, 21-15 and the north eighty acres of the southwest quarter of Section 24, 21-14. One hundred and seventy-two acres comprise the piece.

The Esperanza Land and Oil Company is down 1,000 feet with 12½-inch casing which is a good record for the short time in which work has been progressing. Everything is going smoothly.

New York-Coalinga No. 5 is down nearly 1,000 feet and Jim Shreeves hopes to have it in by the first of the month. The rig is up for No. 6 and it will be spudded in as soon as the well now drilling is completed.

The officers of the Bohemian Oil Company, which recently took over the Coalinga Alpha property, have been elected as follows: L. S. Chittenden, president; W. J. Wilson, vice-president; A. F. Flory, secretary; Farmers' and Merchants' National Bank of Hanford, treasurer and H. L. Seavers, superintendent.—Oil Record.

TO INCREASE CAPITAL STOCK.

The directors of the American Petroleum Oil Company will meet in Coalinga August 4th to decide upon increasing the capitalization of the company by $5,000,000. The present capitalization is $10,000,000. The company, it is understood, plans to extend its operations to other sections of the State. It has large interests near Los Angeles and a campaign for the development of these may be started.

When questioned concerning the plans of his company, T. A. O'Donnell declared that he was not ready at this time to make a public statement. Mr. Doheny, the president of the company, will be here next month to attend the meeting and at that time it is expected a statement will be made.

MUCH DEMAND FOR P. T. C. SECURITIES.

The Union Oil Company Tuesday distributed among its stockholders and the stockholders of the Union Providence and United Petroleum, bonds and stocks of the Producers' Transportation Company, the proceeds to be used for building the pipe line from the San Joaquin Valley fields to Port Harford. The amount was over-subscribed three times, says the Los Angeles Times.

The distribution was in blocks of ten shares of stock and one bond, payment to be at the rate of $150 a month on the 20th of each month until January 20, 1910, when a final payment of $100 will be made. The bonds are to be held in trust by the Los Angeles Trust Company for subscribers for two years from January 1, 1910.

The total bond issue is $3,500,000 and the total capitalization $7,000,000.

FREE INFORMATION SERVICE.

Subscribers to the "California Derrick" are privileged to make inquiries regarding California oil companies which will be answered free of charge to the best of our ability. Just enclose stamp for reply.

In making inquiries send as full particulars as possible. Give the names of the officers, their addresses and the location of the properties. This is especially necessary in the case of old companies. If you have any literature regarding companies send that too. In many cases it will assist materially in securing information.

RAMONA STARTS SECOND WELL.

The Ramona Oil Company, operating at Petaluma, which struck a good flow of gas a short time ago, has erected a second rig about 4,000 feet from the first well and will start spudding in by August 1st. A Parker rotary will be used and it is expected that the oil will be struck at a depth of about 1,500 feet, and within six weeks' time as much faster work will be done with the rotary than with the Standard rig.

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OIL AS AN INVESTMENT.

That the oil business of California is an exceptionably profitable one is evidenced by the regular monthly dividend distribution of scores of companies operating in the various fields of the State. At the present time the companies listed on the San Francisco and Los Angeles exchanges are paying approximately $600,000 monthly and new companies are constantly being added to the list. The companies listed have a record to date of more than $20,000,000, to which must be added many millions more in order to approximate the total profits of the oil business in the past. A fair estimate of the total profits earned by all companies would be $37,000,000. If the exact truth were known, the sum would probably be an even greater one.

For instance, the Associated Oil Company earned $4,000,000 last year, but it has invested the profits instead of paying them out in dividends. No one knows what the Standard earned, but it must have been more than $5,000,000. So here is $10,000,000 to be added to the profit end of the business for last year alone. There are many privately owned concerns which are constantly distributing their earnings.

On the San Francisco exchange, 74 companies are listed, and out of this number 48 are paying or have paid dividends. This month 28 of these companies have paid $486,491 in dividends. A number of other companies pay once in two months and quarterly, and others have no stated period for the distribution of their earnings. It is likely that more than fifty per cent of the listed companies will pay dividends during the year, and the prospects are that several will enter the dividend-paying list before many months. Others will increase their dividends as their earnings increase.

Already within the past few months many have doubled their distribution and the price of the stocks has increased accordingly. The rate varies from around seven per cent to as high as 40 per cent annually, which certainly shows oil investments to be of exceptionally high character.

It is regrettable that the public is not more interested in this form of investment, but, as a matter of fact, most of the stocks listed on the exchanges are held by a comparatively few people who are not desirous of selling their securities. This is evidence in itself of the safety and profitableness of oil securities.

The California oil business has passed through periods of adversity, to be sure, and, in view of the great profit to be derived from the production of oil, this is not strange, as all kinds of extremely profitable businesses are subjected to the same trying ordeals, and blessed is the man who stays with it through these discouraging phases of the industry.

But now the oil business of California is in an enviable position. The producers are organized. Such methods of depressing the business as have been used in the past can no longer be successful and a long period of prosperity appears to be a foregone conclusion. Of special interests at this particular time, so far as oil investment is concerned, is the fact that California has one-half the entire supply of oil in the United States. The United States government predicts the exhaustion of the oil supply within 25 or 30 years, but this cannot apply to California, as this State will have oil to sell long after the Eastern fields have been practically exhausted. The country then will have to look to us for their oil, and one can easily figure out that the price of oil will be rapidly advanced in the near future. There will naturally come a time when our production will begin to fall off, but this falling off may not be regarded seriously so far as income is concerned, because before California enters upon this stage of production the price of oil will have advanced to such a price as will more than offset any possible decline

A peculiar condition faces the industry in this State at this time in that the greater the supply the higher the price. This condition is brought about by reason of the fact that heretofore it has been difficult to fill any large new orders for the product; now, with a large aboveground storage, oil can be delivered in almost any quantities desired; that is, it will be so when the various new pipe lines have been completed, which will be during the latter part of this year and the early part of 1910.

Another favorable circumstance is that the big markets for oil are practically at our doors. All the oil fields of California are located but a short distance from tidewater, and water transportation to the markets is very cheap. Eastern fields are a long way from these markets and the time is not far distant when many of the consumers of Eastern oil will look to California for their supply, because so much of the Eastern oil is transported by rail instead of water, at heavier expense.

Taken all in all, conditions surrounding the oil business of California are ideal. The markets are always open; the business is not subjected to arbitrary dictation of any one marketing company; the supply is constantly increasing and new bidders are constantly arising; the wells run as high as 8,000 barrels daily, and the average is 200 or 300 barrels as against a much smaller amount in the East; a hundred-barrel well in the East is considered a big one, while in California in most of the fields it is considered just fair; the producers have shaken off the shackles of monopoly, while those in the East and in all the rest of the world are still in the clutch.

The investor, therefore, who is looking for safe, sure and profitable investment can find what he is looking for in California oil. There is no necessity for investing in any but legitimate propositions. Investigation previous to investment is as necessary in this as in any other business, and he who invests without this preliminary is entitled to lose his money, if the investment proves a poor one. There are chances of loss even under such conditions as prevail at this time, but those chances are reduced to the minimum and can be practically eliminated by careful consideration and examination of the proposition being considered.

The advice of the "California Derrick" to investors is to acquaint themselves with the oil business of this State and to put in some money after they have satisfied themselves of the extreme profit to be derived therefrom. Get into the proved fields as a rule and avoid "wildcatting." The time will come within the next few years when one cannot get into the proved fields without paying very high prices for stocks, but that time is not yet at hand, because these districts have not been anywhere near fully developed.

ANOTHER CUT IN EASTERN PRICES.

Another cut of five cents per barrel has been made on the high-grade product of Pennsylvania and other districts where there is an underproduction of this quality of oil. The price now stands at $1.58 per barrel as against $1.78 five months ago. No change has been made recently in the price of oil in the mid-continent fields, where there is claimed to be an overproduction and an excess of storage oil. This is certainly a peculiar condition of affairs, but nothing that may happen should be considered strange where the effects of a monopolization of the marketing facilities are to be seen.

The Standard is about the only purchaser of refining oil, and is therefore in position to dictate prices without reference to supply and demand and only with reference to its own pocketbook California operators are in a position whereby they can congratulate themselves as being practically independent of conditions arbitrarily created by an outside monopoly. They have cut loose from nearly all dependence upon such a market and are, in a measure, a monopoly by themselves. Those producers who are not in the organizations are also in an ideal position, as they are paid a larger sum for their oil by marketing companies than they otherwise would get to induce them to stay out of the agencies. In other words, every producer in California, either in or out of the agencies, benefits by reason of the fact that there is in California a strong combination of producers.

We quote below an editorial by the "Oil City Derrick" on Dr. David T. Day's prediction that the oil supply of the United States would be exhausted within 25 or 30 years. With a minimum supply of eight billion barrels, the estimate placed upon the supply by government geologists, and a maximum depletion of 165,000,000 barrels a year, it would take 50 years to exhaust the oil of the known oil fields of the country. We notice that the

"Oil City Derrick" figures on 65,000,000 barrels production a year, probably an error of one hundred millions.

It is all true that one-fifth, or 2,000,000,000 barrels, have been produced in the last 50 years, but the increase in production has been very large within the last ten years and promises to continue to increase heavily for some years to come, so that until the maximum of production has been reached the depletion of reserves will show a vastly greater amount in the next ten or fifteen years than in the past fifty years.

Inasmuch as California has one-half of the reserve supply, according to government estimates, or approximately 4,000,000,000 barrels, oil must naturally, after the exhaustion of the Eastern fields, be looked for in California. At the present rate of production California's fields will be producing long after those in the East are exhausted. Of course new fields will be found and developed and it is possible that new supplies will be found sufficient to offset the exhausted districts.

While the "Oil City Derrick" takes exception to the time of exhaustion, it must also consider the balance of Dr. Day's report, which bears out the fact that it was "27 years," and not "270 years," as stated by that paper, for Dr. Day recommends the curtailment of the use of oil for fuel, which he would not do had he meant to have said "270 years."

California does not need to worry about the exhaustion of the oil fields of the country. When the time comes that all eyes are directed to California for supply, what will be the price of oil? We will make up in price what we lose in production, and probably more.

The editorial is printed herewith:

END OF OIL SUPPLY.

Dr. David T. Day, of the United States Geological Survey, in a report to the conservation commission, has predicted an end to the production of oil in 27 years. So the news reports inform us; we have not seen the official text of the doctor's prophetic disquisition. The statistics accompanying the sensational report represent Dr. Day as saying that about two billions of barrels of oil have been produced in this country and that a minimum of ten billions, or a maximum of near twenty-five billions of barrels remain to be produced.

From these figures it may be suspected there may be some misconception of Dr. Day's prediction. The approaching semi-centennial of the Drake well warns us that we have been nearly fifty years bringing the two billion barrels of oil to the surface. Reference to Dr. Day's annual report on mineral resources shows the present rate of production to be about 65,000,000 barrels a year. One hundred years, at this rate of output, would exhaust little more than one-half the minimum amount remaining to be produced, according to Dr. Day's reported estimate. Computing on the basis of the estimated maximum, this rate might be maintained for 400 years.

As above stated, the official report is not before us. We are inclined, then, to assume that Dr. Day must have said 270 years instead of 27 years—A very material difference. Dr. Day possibly knows as much as any man about the hidden resources of petroleum—though he has made no fortune wildcatting for production—and he is more likely to pin his reputation to a supply of 270 years than to one for only 27 years. The doctor may live for verification or refutation of a 27-year forecast, while Dr. Wylie and the other members of the Century Club will not be here to remind any one of failure 270 years hence.

For the average man, it is enough to know that American oil production at present is the largest in history and that it exceeds consumption by several millions of barrels annually. The accumulated stocks are in excess of a whole year's production. And while this state of affairs lasts, the men who have their money in producing wells are far more anxious to enlarge the export market than to conserve a resource for posterity. They are more fearful of an invasion of Mexican grease than of the exhaustion of crude supplies before their grandchildren have the pleasure of sniffing the odor of petroleum on an asphalt base, with an admixture sulphur.

Dr. Day may be right in his estimates. The sensational reporters are wrong about the twenty-seven years to the period of famine. But the driller has much to do in this country before he discloses the last barrel of petroleum. And when the oil is all gone the airships may run on methyl gas, or radium, and be lubricated with Jersey butter. Speculative inquiry into the future is easy, and, if the future is sufficiently distant, it is safe.

GREAT ACTIVITY IN SPITE OF GOVERNMENT RECOMMENDATIONS.

At the present time there is great activity in boring wells in all portions of the State, and new operations are being started daily in the proved sections, even though a large surplus is being accumulated on the surface. The result is that in spite of this accumulation the production is rapidly increasing from month to month, as shown in previous articles

The warning from the Government as regards the future has had no apparent effect in the use of oil as fuel on the Pacific Coast, and it is not likely to have any effect until the price of oil arrives at that point where it is on a parity with the cost of coal, which is greater here than in other portions of the country on account of transportation costs.

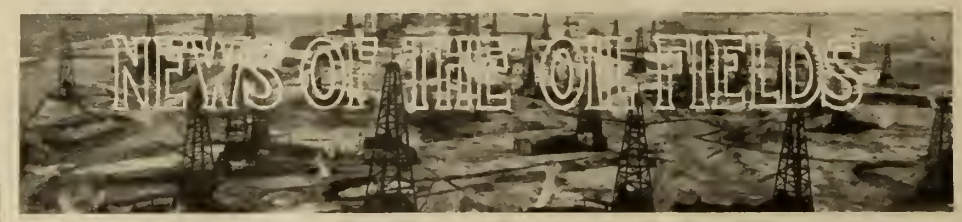
It is understood that the Western Pacific has arranged for its fuel supply through the Union Oil Company and the Independent agencies. This is surmised by reason of the report that this road will haul a large portion of the pipe from the East to the Coast during the Fall months after the road has been completed. The transportation charges on this pipe will be a considerable item and will go a long way toward paying for the supply of oil the road will use for the next year.

It is stated that the Standard Oil Company will shortly extend its business to cover the fuel oil trade. This is generally believed by reason of the fact that it has announced its intention of purchasing all grades of oil from producers, something that it has hitherto refrained from doing. Heretofore it is understood there has been an understanding between the Standard and Associated to respect each others field, the Standard buying only the refining grades and the Associated purchasing and selling only oil used for fuel and other purposes. Naturally, both companies have been obliged to take some oil of both grades, but whenever one company had a grade used by the other it was turned over to the proper parties for marketing. This tentative agreement is now supposed to have been abrogated, as the Associated has apparently lost much prestige because of its failure to secure the agency's oil, thus placing the company in a position that leaves the Standard a free hand.

While the Union and the agencies are not much troubled over this phase of the situation it is acknowledged that it places a different outlook upon the future so far as competition is concerned. There is likely to be a fight within the next year or so, but just what shape it will assume is now largely problematical. From a strategical standpoint the Union has the upper hand, and no one fears the outcome, for thus far the Union has at all times come out winner in these fights, even to the point of selling oil to the Standard at better than market prices at different times. There is no reason to think that with even greater power than it has ever before been possessed of the Union will lose in the big fight that is apparently in store.

The prices paid in Eastern States for petroleum are given below, these being the latest quotations. Prices prevailing five months ago for Pennsylvania and other products in the same section were 20 cents per barrel higher, there having been four cuts of 5 cents per barrel each. The same quality of oil in California as in some of the Eastern States brings nearly double the price. It will be noted that Kansas oil is quoted at 38 cents for thirty gravity and above. The lowest quotations and contract prices for California are 63 cents, with higher prices in many instances:

Pennsylvania	$1.58
Mercer Black	1.05
Corning	94
New Castle	1.02
Cabell	1.12
North Lima	86
South Lima	81
Illinois, above 30	62
Illinois, under 30	54
Indiana	81
Princeton	62
Kansas and Oklahoma, 30 and above	38
Kansas and Oklahoma, below 30 (fuel oil)	28
Somerset	72
Ragland	50
Corsicana, light	70
Corsicana, heavy	53
Henrietta, Texas	52
Canada	1.26



Reported by

Special Field Representatives

of the

California Derrick

COALINGA.

The monthly field report has just been completed by Secretary R. W. Dallas, of the Independent Sales Agency, and it shows a decrease in production, in June as compared with May, of 123,957 barrels, which is due to the present congested transportation conditions. The decreases are found in the west side field, which is mostly effected by the Agency. There were three less producing wells in June than in May, and also an increase in the number of producing wells suspended. In the east side there was an increase of three producing wells, making the total number of producing wells 462, stationary for both months. There were less new rigs in June. In the west side, the sixty-two drilling wells were the same in number as in May. In the east side there was an increase of four. Shipments in both sections show a decrease, the heaviest being on the west side, while stocks show an increase, but not sufficient to balance the difference.

Following is the June field report:

	East Side	West Side	Total for June
Wells suspended	13	9	22
Wells drilling	51	62	113
Producing wells suspended	6	62	68
Wells producing	208	254	462
New rigs	16	29	45
Storage (barrels)	64,000	482,770	546,770
Shipments (barrels)	635,700	567,777	1,203,477
Production (barrels)			1,220,630

W. L. Cushing, general superintendent of the Producers' Transportation Company, is arranging for the beginning of construction work on the new line. The camp on Section 4 is almost completed. Commissary Gould is now awaiting the arrival of the tents before the finishing touches are put on. The work of laying the 10-inch feed pipe into the fields has already started. The first shipment of 8-inch pipe has arrived. The company is receiving bids from teaming contractors for the hauling of the pipe along the route of the line.

The second camp will be erected about fifteen miles south of town, where the first pumping station outside of Coalinga is to be located. Offices have been established in the Webb Block, but in two or three weeks it is expected that the force will occupy the old Union Oil Building on F Street, which was built and used for offices when the Union first entered the field some ten years ago.

Mr. Cushing expects to have the line in operation, if conditions are favorable, before the first of February. The time limit is comfortable, he declared, and if everything runs smoothly and no serious setbacks are met with, the pipe should be ready for use at the expiration of the Associated contract. Work will be begun on the Coast about the same time it is begun here. In Maricopa, storage tanks are being erected. That, for the present, will constitute the work to be done there.

According to a Bakersfield exchange Engineer Parsons, of the firm of Barton & Parsons, running the survey for the Independents pipe line, is now working between the Devil's Den and the Temblor Ranch. This crew of surveyors began work at Dudley, and the line from that point is across the corner of 25-18, and as far west as Section 4, in 26-17. From the latter point the survey will hug the hills in order to avoid the great gulches that have been torn by water freshets through the mesas adjoining the mountains. The preliminary survey shows that the lines will cross Townships 26-18, 27-19, 28-20 and 29-21. The line practically cuts all of these townships diagonally, and with the last named township it is brought as far south as Frazer's Spring. From near this point, possibly beginning on Section 1, 30-22, the line to Kern River will be begun. In the meantime, the main line passes across the corner of 30-22, cuts a section off of 31-22, runs across Sections 30 and 31, in 31-23, to Midway, in 32-23.

The Cawdor Development Company's property in Section 26, 20-14, changed hands this week, and thirty acres of the property, which was deeded land, brought $2,000 an acre. The remaining thirty acres, upon which two wells are now producing, was obtained on a ten-year lease, at a one-third royalty, which allows the new owners the storage on hand, amounting to between 5,000 and 6,000 barrels, and all equipment, including tools and materials for the four new wells that are to be drilled on the lease. The Coalinga Homestake Company is the new owners, and has taken possession. The directors are H. C. Kerr, A. P. May, H. R. Crozier, E. R Walker and C. L. Morrill. They have incorporated for $100,000. C. L. Morrill will be in charge of the work.

The leased land is the north ten acres of the southeast quarter and the south half of the south half of the south half of the northeast quarter of Section 26,20-14. The deeded land is the southeast three-quarters of the north half of the north half of the southeast quarter of the same section.

The purchasers believe they have a fine investment They have signed up with the agency which will care for the production on hand. The two wells insure a daily production of about 9,000 barrels per month. They believe that the deeded land, which adjoins K. T. and O., Section 25, will give better wells, being in deeper territory. Dr. Alexander Dallas was the principal owner in the Cawdor Development Company, and, although giving up this company, he still retains his other interests in the field.

G. H. Umbsen, a well known San Francisco real estate man, C. H. Holbrook, Jr. and H L. Myerstein was a party of San Franciscans who were down from the north Sunday to look over local properties. It is reported that the above named gentlemen have an option on and have about decided to take over the old Coalinga Enterprise property on Section 6, 21-15. It is reported that if the deal is put to a successful end, the new owners will begin immediate work with two rigs.

A questionable proposition is being placed on the market by San Francisco people, trading upon the good name and fame of Coalinga. This is the North Coalinga Oil Company, located about twenty-five miles north of the proved area of the district. Many of the statements made appear to be a long way from the truth. The officers are E. L. Sadler, Fresno; J. E. Hughes, Fresno; J. H. McKnight, H. E. Barnum and J. C. Cullen, San Francisco. The property may, in itself, be all right. This, time alone will tell, but it is not in the Coalinga field, and it will be many, many years before development will prove the twenty-five intervening miles. It is to be sincerely hoped that a new field will be opened in the vicinity whre this company is said to be operating. Wild catting is a legitimate proposition, and should be encouraged, but wildcatting under representation of proved and sure territory should be frowned upon.

The Trader's Oil Company is about finishing one 37,000-barrel tank, and has the foundation ready for another of like capacity.

The Nevada Petroleum Company, on Section 30, 20-15, is reported to have struck a large flow of water 160 feet below where the first water was struck. The policy of the company is to go down with well No. 2 in a careful manner, and to follow the same lines in all drilling. While many consider the water as being a serious menace, it is believed that the difficulty will be overcome. Well No. 4 is 2,200 feet deep.

The Bohemian Oil Company has bought the lease of the Coalinga-Alpha Oil Company, on the south half of the south half of Section 22-21-15, and also purchased the rig and entire equipment of that company, and drilling is now in progress. The Bohemian is close to the Azores, which is now down about 1,800 feet. H. L. Seavers, one of the best known drillers in the west side, and formerly connected with the Standard, has been employed as superintendent, and the members of the company are very confident of success. The Bohemian's officers are: L. S. Chittenden, president; W. J. Wilson, vice-president; A. F. Flory, secretary, and the Farmers' and Merchants' National Bank, of Hanford, treasurer.

The Premier Oil Company, Section 24-20-14, is drilling its east line. Two rigs are completed, one rig spudding, one rig drilling. Lumber is on the ground for the fifth well. This string offsets the American Petroleum on Section 19-20-15.

The Blair Oil Company, Section 14-21-15, is putting in 10-inch casing, having decided to leave the 12½-inch casing where it was landed over a year ago. The rig has been greatly strengthened, and will enable the drillers to go ahead.

The Jefferson is now in good shape, and is reported to be good for close to 1,000 barrels, although this is an estimate. It is likely that it will settle down to about 500. It recently sanded up.

The new 1,250-barrel storage tank on the Amy has been completed, and the work on the new boiler is well in hand. The Amy has one of the best wells in six. It is flowing at a good rate.

The Coalinga Aladdin has a big well on its lease, and will push developments as rapidly as possible. It will likely drill from six to eight wells.

The Lucile is installing an 80-horsepower boiler. Well No. 1 is off duty at the present time, according to report, but will shortly be placed back in the producing list as soon as the trouble with water has been overcome. The other two wells are said to be doing nicely.

Reports from the Coalinga Mohawk are encouraging. A better flow of oil is being obtained, and at times flows at the rate of several hundred barrels per day. While there is still some water, it is expected that everything will be in shape to sink deeper very soon.

KERN RIVER.

The Cleveland Oil Company is reported to have brought in a well on Section 8 good for 100 barrels a day. The oil is of the usual gravity of the field. An old well on the property is being cleaned out, and it is expected will be a good producer.

The property of the Kern Oil Company in 28-28-28 is reported sold for a consideration of $150,000 to F. V. Gordon and associates, the closing of the deal to take place on August sixth. The property consists of 160 acres, and there is now one well doing 20 barrels a day, the oil being pumped by the Associated. This is one of the largest deals in the field for a long time.

The Santa Fe well on Section 2 is reported to be something over 4,500 feet in depth, with 7⅝ pipe. No oil has been struck, but it is the intention of the operators to go as deep as is possible in order to thoroughly test the territory. There has been a slight showing of gas.

The production of the Kern River field for the month of July is estimated at 1,275,000 barrels, approximately the amount as for June. Drilling in the northern portion of the field is very active, and good results have been attained in several instances, leading to the belief that the field will be materially extended to the north, and exploding the theory that the field can not be extended.

The well brought in a short time ago on the New York-California lease, between the Mecca and the Columbian, is doing between 60 and 70 barrels per day, and is a much better well than was expected owing to the fact that on each side the small lease has been drained for a period of seven or eight years. On the Mecca there is a well which has done almost exactly 100 barrels each and every day for seventeen months with the same pump. Another well on this lease is making 90 barrels a day after six years of pumping.

BIG GASSER NEAR MIDWAY.

Six miles east of the proven oil fields of Midway the Crandall-Matson wildcat well in the Buena Vista hills is belching 8,000,000 feet daily of the finest illuminating gas ever found in any country. This is the largest gas well discovered in California, and will rank with the great gas wells of the world. As the owners are after oil there is some disappointment, but it may have its compensations, as it is likely that this enormous flow may be controlled and piped to remote points for light and fuel. The well is on 10-32-24.

The well is down 1,660 feet, and struck the first rich pocket at 1,440, although there was sufficient gas within 500 feet of the surface to supply the camp.

The roar of the gas can be heard for three miles, and close to the well the sound is like a cataract.

It looks now as though any attempt to make an oil well out of the hole will have to be abandoned, unless the gas pressure moderates in a short time, so that further drilling can be prosecuted. Oil men who are familiar with Eastern fields declare that the well is in gas territory, and it is fruitless to attempt to make anything else out of it. No oil has been found at any point.

M. H. Murray, who has had a wide experience in Eastern gas fields, says this well is a wonder, and will compare with any big well of the kind that has ever come under his observation. He recalls the fact that the gas wells in the Kane field in Pennsylvania supply gas for the cities of Pittsburg and Buffalo, although they are distant 300 miles. In the same connection it is assumed that this great fuel supply can be piped to Los Angeles and San Francisco.

The land on which this well has been brought in is remote from proven oil territory. It is patented land belonging to the Buena Vista Land Company, and is under bond to Captain William Matson of San Francisco. L. A. Crandall has had charge of the drilling operations, and the well is often called by his name.

He has an interest in the property as well as being employed in a managerial capacity. Associated with Captain Matson are other San Francisco business men, and the operations are carried on under the name of the Honolulu Oil Company, a corporation which has been organized to prosecute the work. A number of sections of located land in the vicinity are under bond and option to the same people.

MIDWAY.

The Midway Crude Oil Company, on Section 31-31-23, is down some 1,000 feet in well No. 2, and nearing the oil sand.

On Section 12, the Strasburger Company has erected four rigs, and has four already up on Section 18.

The Sunset Monarch has four rigs up on Section 20, and the Coast Line Company has one on Section 8.

On Section 28, the Wheat & Wilson Company has two rigs up, and lumber on the ground for another.

The W. T. M. No. 2, on the northwest quarter of 25, has penetrated the first sand at the 1,150-foot level with 10-inch casing.

The Tight Wad's well No. 1, that was brought in a few weeks ago, is still producing 500 barrels a day. This is proving one of the best on the hill, and the company expect to deliver some 10,000 barrels to the Standard during this month.

The Elkhorn Oil Company's (Graham Bros.) new well, that was brought in a short time ago on the southeast quarter of 25, is doing 600 barrels. This well is 1,340, finished with an 8-inch casing.

The B. H. C. Company, in the northwest quarter of 25, has finished well No. 1 at a depth of 1,306 feet. It is doing 300 barrels a day.

The Midway Queen, on the southeast quarter of 25, owned by W. B. Moore, and which was drilled three or four years ago, and went so deep that it tapped the water stratum, is being cemented up and a new well is to be put down on the lease. This well adjoins the Elkhorn on the west, and has every prospect of being in the same sand as the latter.

The Twenty-five Oil Company has just finished well No. 8 on the northeast quarter of 25. It is making a production of 350 barrels a day.

The Paraffine Oil Company has just finished re-drilling well No. 1, which is now making 250 barrels a day. Well No. 2, which has been flowing for some time, took a new start last week and began throwing up a production of about 800 barrels. The drill in well No. 4 of this same lease is in the first oil sand, 1,300 feet.

The Mascot Oil Company has just finished installing an air compressor in well No. 6, which has increased its daily production from twenty-five barrels a day to 125. This company is one of the heaviest producers on the hill, the production averaging about 45,000 barrels a month. It is the intention of the management to install air in all of its wells, ten in number, which it anticipate will double their output.

The Wilber Oil Company, operating on the northeast quarter of Section 22, has a 250-barrel producer in well No. 1, and is now drilling well No. 2.

Well No. 3, on the Oregon-Midway lease, on Section 5-32-23, went into the oil sand at 1,100 feet. This well is within 300 feet of well No. 1, that is making 150 barrels a day.

SUNSET.

The Ruby spudded in on well No. 7, which occupies the northeast corner of their lease on 2-11-24, the first of the week. Preparations are being made for the erection of a new rig for well No. 8.

The Lady Washington Oil Company, who went into the big sand with their well No. 2 last week, are pulling their 8-inch casing, and will cement off both the water and oil that is now bubbling over the top of the casing at the rate of 200 barrels a day, and send the drill on down to the 2,300-foot level, if possible.

The new warehouse of the Oil Well Supply Company is to be finished in about thirty days. It will cover a space 40x80 feet, and progress has been rapid since the work of construction started recently. Manager Scott, of the branch office in Bakersfield, visited the scene last Saturday, and was much pleased with the outlook.

Good progress is also reported in the erection of the new warehouse for the National Supply Company.

The New Center Company has started on well No. 10. It has just finished cleaning out well No. 5, that had a "spouting spell" a few weeks ago, and it gives promise of being an excellent producer. Well No. 9 is producing a little better than 200 barrels a day, and No. 7 is making 300.

The big geyser that was struck in the Northern's well No. 1 last week, and which has since been throwing a stream estimated at 25,000 barrels a day, is to be used to furnish boiler water for the New Center and other adjoining leases that may desire it.

Pipe lines are now being laid from the well to the New Center's boiler station, and others will be laid as the demand

requires, and it is thought that this well will soon be supplying practically all the leases in that section. There is certainly ample for all that need it, and if the pressure that it now has continues the well will need no pump to carry the water to any lease in that vicinity.

While the Northern people were after oil when they started in to drill this well, and were pretty much disappointed when the water first broke in, it may yet prove a boon in disguise, and prove one of the best paying properties in the district.

VENTURA.

Exploitation of the Ventura County fields continues, and more attention is turning that way.

The Paula Oil Company, owned chiefly by some of the large stockholders of the Palmer at Santa Maria, has acquired 160 acres in Santa Paula Canyon with three ancient wells, drilled about twenty years ago and shut in for some ten years, about 160 feet in depth, which are to be cleaned out and pumped. One of them has already been fixed and the indications are that they will yield an aggregate of about twenty barrels daily of 30 gravity petroleum. A standard rig is starting to drill a deep hole.

The Hill Top, a Santa Paula company, in which B. and H. H. Yonkin of that town are leading stockholders, is just spudding on eighty acres two miles from the Paula and near the Clark & Sherman well. It has no wells on the land.

The Hillside Crude is cleaning an old well and starting a rig to drill its first new one. Dr. J. J. O'Brien of this city, the organizer of this company, has just sold his interest to Mr. Burrows of the Santa Paula, formerly with the Union. Dr. O'Brien is seriously ill and has given up all business pursuits.

For the last year or more there has been very little or no change in Ventura County's average output, month by month, but the development under way and starting ought to change before long and by 1910 the old Ventura fields may be showing a substantial gain in production.

EXTENDING KERN RIVER FIELD.

Figures for the oil production of the Kern County fields for June show an increase of 58,000 barrels over the May production, or a total for June of 2,049,000. Kern River is credited with 1,280,000 barrels, a gain of 40,000 barrels; Sunset 161,000 barrels, a gain of 43,000 barrels; McKittrick 445,000, a loss of 35,000, and Midway, 163,000, a loss of 8,000.

The west side fields, being in comparative infancy, may increase or fall off without causing much surprise, but the fact that the Kern River field, which years ago was supposed to be established in its boundaries and to have reached its maximum of production, shows such a remarkable gain is of great significance.

The fact is that there was no justification for the belief that the limits of the producing territory of the Kern River field had been established, and recent drilling shows that the oil sands extend much farther to the north than was formerly supposed. How far north they go has not yet been shown, for producing wells are brought in as fast as the drills can be sent down along the northern frontier.

So far as anyone knows the oil bearing territory may extend clear to Poso Creek. It is true that wells were sunk in that direction years ago, but they were put down with improper tools and by companies that were not prepared to stand the expense of a thorough exploitation of the land. They failed, but their failure proves nothing.

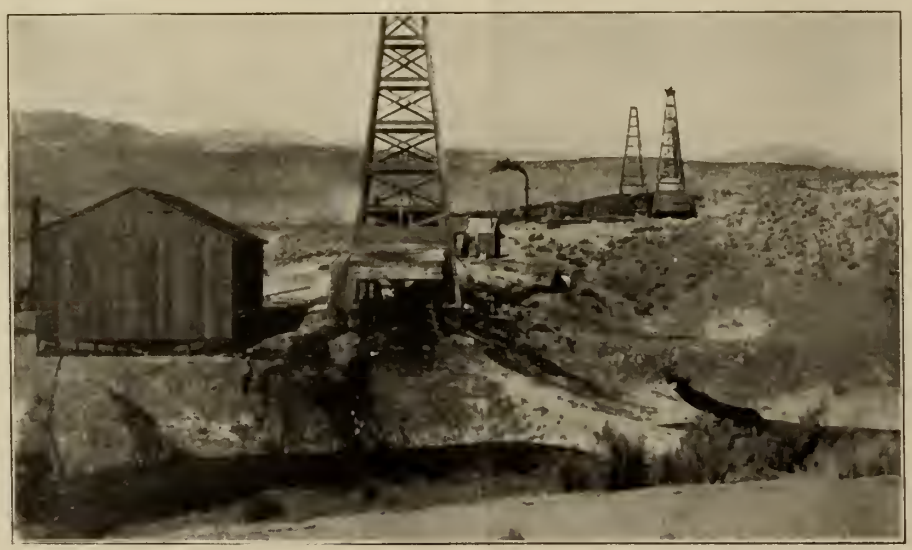
It seems to be the general opinion that oil in larger or smaller quantities will be found on the south side of the river, and if these hopes are well founded the Kern River field may also be still in its infancy.—Bakersfield Echo.

STANDARD GETS GOOD WELL.

The Standard Oil Company is reported to have gone into the main sand in its well on Section 30, 32-24, Midway. It is asserted that the well is good for 400 barrels daily. The company has already proved the center of the tract, this well being on the east line of the Twenty-five Company's property, thereby proving up that portion of the territory much to the gratification of "25" owners. The Twenty-five Company is reported to have negotiated a sale of the sixty acres at a consideration of $3,000 an acre, or $180,000 for the entire tract. If true this makes one of the largest deals of late in the district. The price is a record one for so large a piece of ground although sales of a few acres have recently been consummated at this figure.

SAND FOR LADY WASHINGTON.

The Lady Washington Oil Company a short time ago went into the oil sands at a depth of 1884 feet on its property in Section 7, Sunset. It is believed that this is a top sand as considerable water is in evidence and, in accordance with this idea, the well will be deepened to at least 2,300 feet or until the main sand is encountered. The similarity of the formation to that of the Johnson well further to the south indicates that a big well will be the result. The Johnson is said to be good for nearly 500 barrels daily. The Johnson people are drilling another well.



Madison Oil Company's Well in Foreground — McKittrick District

In Section 6, just north of the Lady Washington, operations, the La Blanc is down upwards of 1,600 feet and is passing through practically the same formation as is general throughout the district.

The New Center well is progressing in fine shape.

The Templor-McKittrick Company has secured a lease on the Golden West property at Sunset and has moved its machinery from its lease in southeast McKittrick. Operations are to be pushed.

McKITTRICK.

Superintendent Miley reports that he will perforate the Providence's deep well and pump it. In drilling some oil sands were passed through and great bodies of shale bearing oil and it is the belief of the operators that there is enough oil in the well to make it a paying proposition. This is the deep well of the field, being something over 3,500 feet deep. By drilling it is possible that rich sand might be found deeper. The management believes that it will do to perforate and pump the well as it stands.

The Madison Oil Company has been organized to take over the Benedict lease in Section 11, 30-21 just north of the

San Francisco and McKittrick property. The lease is for twenty years. A full complement of working material is already on the ground having been taken over with the lease. One well is producing from 40 to 70 barrels of oil, its depth being 975 feet with 140 feet of oil sand. Other wells are to be drilled immediately. The property is 700 feet north of the S. F. and McKittrick. Funds are being raised by the Lincoln Mortgage and Loan Company.

Just to the west and a little to the south the Carolina is reported to have brought in a good well at a depth under 1,000 feet. It is said the production amounts to close to 100 barrels daily.

BROKER MALTMAN SAYS OIL IS THE THING.

That the brokers of the San Francisco Oil and Stock Exchange are getting busy over the prospects for enlivened trading in listed oil stocks in the immediate future is evidenced by the visits of several of them to the various fields of the State within the past few months.

Among the latest to make a trip through the fields is Mr. Maltman, of the firm of Hopkins-Maltman Company, who was very much impressed with the activity prevailing throughout the State. Mr. Maltman is shortly to become interested in a large proposition which has been practically closed. Mr. Maltman speaks of his trip and of the oil situation generally as follows:

"I have noticed a heavily increased demand for oil from various sources, especially from transportation and manufacturing companies, steamship companies and for foreign account and this has given the oil business a great impetus during the past few months. The advance in the price of oil is many fold and it is with difficulty that the production keeps pace with the demand.

"In my trip over the fields I was especially interested in Coalinga where there has been a heavy increase in production and prospect of a still further great increase. From the number of wells being drilled I look for an enormous production in the next two or three years.

"In Sunset and Midway drilling operations are seen on every side. In Midway around Section "25" hill within a radius of two miles there is wonderful activity. As an instance of progress here take the Rico Oil Company. This company should be watched from a production standpoint. Stock in this company was originally sold for 60 to 80 cents per share. To-day the stock is held at not less than $3.50 with $3.15 bid. The company is only eight months old. Many other just such cases could be cited. The organizers of most companies, however, will not give the public a chance to get in on the ground floor nor to know the real value of oil stocks.

"In the Santa Maria District there is the great Palmer gusher with a capacity of 8,000 to 10,000 barrels daily. The company is paying handsome dividends from the single well.

"The growth of Coalinga, Maricopa and other towns in the oil fields is phenomenal. It is like the rise of boom mining communities, only more stable. Coalinga will have a population of 10,000 very soon and Maricopa, from a small village with a few houses, has grown to a bustling city within eight months' time and will be much bigger as field developments progress. Coalinga has 85 automobiles. Its payroll is $250,000 a month.

"As for myself I will say that I am urging my clients to get into good oil propositions. I am using my best efforts to awaken a lively interest among the brokers to also acquaint their clients with conditions.

VENTURA OIL DEVELOPMENT CO.

The Ventura Oil Development Company is a recent incorporation formed to develop a tract of 640 acres in the vicinity of Piru, Ventura County. This property adjoins the famous Modelo wells and is considered as being an exceptionally good tract of ground. The company is capitalized at 3,000,000 shares, all of which is treasury stock. Operations are to be started immediately. The Lincoln Mortgage and Loan Company of San Francisco will finance the company.

ASSOCIATED DIRECTORS MEETING.

The directors of the Associated Oil Company held a business meeting at the office of the company in the Kern River field on the fifteenth. Contrary to expectations, nothing developed with reference to a change in the directorate, and the business in hand had only to do with routine matters, the question of pushing the pipe line work from Coalinga to Port Costa being among those considered.

A half million barrel reservoir is to be constructed at an early date on the San Joaquin lease, and another reservoir of similar capacity will be built before the end of the year.

"We will have," said Secretary O. Scribner, after the meeting today, "over 4,000,000 barrels of oil in storage by January 1st. We have more oil now than we know what to do with, and the storage reservoirs agreed upon are a necessity."

Asked as to the activity in the Kern River field, and the report that the Associated is to drill 100 wells in anticipation of a shortage at the time when its contract with the Independent expires, Mr. Scribner said there was nothing in it.

"We are only drilling line wells now," said the secretary, "to protect our property. We have no need to add to our supply of oil at present. On the contrary, as I have said, we have more oil than we know what to do with."

DECLINE IN GULF COAST.

Gulf coast production in June averaged 34,830 barrels a day, as against 35,079 barrels a day in May. Shipments and estimated consumption averaged 40,119 barrels a day, as against 37,346 barrels a day in May. The shortage indicated in June was 158,687 barrels, an average of 5,289 barrels a day. In May the indicated shortage was 70,294 barrels for the month. Stocks of Gulf crude on July 1 were put at 2,397,684 barrels. Southeast Texas production in June decreased 63,525 barrels, as compared with May. Louisiana increased 20,970 barrels in June, due to increases at Caddo and Anse la Butte. The net decrease for the entire Gulf coast region in June was 42,555 barrels.

RIVALRY OF PETROLEUM.

Coal consumption in Alaska decreased in 1908 as compared with 1907, owing largely to the decreased industrial activities brought about by the financial depression, but in part to the increasing use of petroleum as fuel. At the Treadwell group of mines petroleum was substituted for coal, and there was also an increase of petroleum-burning engines on Yukon River boats. The shipments of petroleum to Alaska in the year ending June 30, 1907, amounted to 117,696 barrels; in the succeeding twelve months this increased to 285,642 barrels.

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GASOLINE CONSUMPTION.

C. D. Chamberlain, a prominent oil man, is quoted in a daily paper as saying that last year's consumption of gasoline was about 18,000,000 barrels, of which the Standard Oil sold about 14,400,000 barrels. At forty gallons to the barrel, it made the Standard's sales about 576,000,000 gallons. An increase of 1 cent a gallon means a total of $5,760,000.

UNION WELL SUPPLY PLACES BIG ORDER FOR PIPE.

The Union Well Supply Company, of Los Angeles, placed the order for the pipe for the new pipe-line to be built by the Producer's Transportation Company from the various fields to the Coast. This is one of the largest orders for pipe as yet placed in the State. It was inadvertently stated in the last issue that the Union Tool Supply had the order.

WHEN WILL OIL REACH TWO DOLLARS?

The time is not many years distant when California oil will be selling at from $1.50 to $2 per barrel at the well, that is, if the predictions of David T. Day, of the United States Geological Survey, are anywhere near the truth. He predicts an exhaustion of the oil supply within thirty years. California cannot be figured along these lines, however, because of its possessing half the supply.

As soon as the Eastern fields begin to show material decrease up goes California oil. Eastern marketing companies are already beginning to show a willingness to make long-time contracts. That is a straw to show which way the wind is blowing.

California operators will do well to figure out where they stand, not for to-day or to-morrow or next year but for the next four or five years. There is going to be a big market and demand for California oil in days not so far distant and the price is going up.

Dollar oil was predicted only a few months ago. Two dollar oil within five years is not beyond the bounds of reasonable expectation. We have the supply. We will get the money. Oil can go to $1.50 easily and yet compete with coal for fuel. Why should it not go there soon?

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for "California Derrick" by J. M. Nesbit, patent attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

924,378. Pipe-reamer, Wm. F. Porter, Duke Center, Pa.

925,906. Combination anchor and wall-packer, Chas. M. Heeter, Butler, Pa., and Joseph W. Heeter, Butler, Pa.

925,510. Oil-well pump, Wm. R. Ritchie and Thos. N. Kellett, Los Angeles, Cal.

925,960. Well-drilling machine, Geo. W. Smith and Clayton C. Sanford, New Haven, Ohio.

926,562. Under-reamer, Alfred G. Heggem, Coraopolis, Pa., assignor to Oil Well Supply Co., Pittsburg.

926,608. Under-reamer, Frederic W. Ritter, Jr., Washington, D. C., assignor to Oil Well Supply Co., Pittsburg.

NEW INCORPORATIONS.

The Amber Oil Company has filed articles of incorporation with the County Clerk of Kern County. The directors are Wm. H. Houser, Mary E. Houser, George A. Knox, Ardelle Knox and C. J. McDivitt, all of Randsburg. The capital stock is $500,000, with $500 paid in.

The St. Albans Oil Company has filed articles of incorporation. The directors are C. H. Holbrook, Jr., Wm. L. McGuire and L. B. Williams, of San Francisco; C. A. Orr and M. Orr, of Berkeley. The capital stock is $100,000, and $25 has been subscribed.

Camwell Oil Company, Fresno; capital stock $500,000; by Wm. H. Crocker, George E. Cameron, Wellington Gregg, Jr., Joseph D. Redding, Walter Stopford, W. R. Berry, E. Zimmer; principal place of business, San Francisco.

Alaska Commercial Oil Company, Seattle; capital stock, $1,000,000; by W. B. Kavanaugh, S. C. John, Ralph Boykar, C. F. Sinclair and Clarence Cunningham.

Palmer Annex Oil Company, Santa Maria; capital stock, $2,000,000; by L. E. Blochman, F. L. Brown, G. I. Walker, L. A Hilborn and H. W. Barnard.

Alpine Oil Company, Fresno; capital stock, $75,000; by N. Benham, S. N. and L. L. Griffith.

Awalt Oil Company, Fresno; capital stock, $200,000; by L. P. Timmins, G. W. Beall, E. Awalt, A. S. Cagwin and F. M. Pool.

Waratah Oil Company, San Francisco; capital stock, $300,000; by A. L. Weil, M. Syme, E. B. Davis, Jesse Mueller and W. C. Eckhoff.

Ventura Oil Development Company, San Francisco; capital stock, $3,000,000; by W. N. Howes, C. B. Barnard, Pelz James,

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GOVERNMENT EXPORT REPORTS

	JUNE				YEAR			
	1908		1909		1908		1909	
	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars	Gallons	Dollars
Baltimore	1,513,638	$ 112,211	1,553,882	$ 125,825	14,730,736	$ 1,240,322	25,300,508	$ 1,750,082
Boston and Charlestown	29,446	4,587	86,029	9,318	1,144,547	104,546	1,084,012	99,967
New York	76,451,398	6,285,219	66,047,797	5,073,623	751,583,423	63,043,551	767,751,762	62,328,873
Philadelphia	36,111,310	2,295,897	35,499,197	2,358,949	479,145,325	30,589,078	135,306,405	27,743,844
Galveston	105,882	13,056	49,182	6,885	168,687	22,293	255,356	51,067
Sabine	6,062,096	274,227	19,108,835	816,821	74,776,847	2,995,382	161,504,315	6,336,502
San Francisco	9,806,085	515,045	10,133,121	360,620	68,487,804	3,169,992	92,665,460	3,672,772
Total	130,079,855	$9,500,242	132,478,043	$8,752,041	1,390,037,369	$101,165,164	1,483,867,818	$101,983,107

D. D. Wannamaker and F. P. Bonham; E. F. Eastman, superintendent and general manager.

Los Angeles-Coalinga Oil Syndicate, Fresno; capital stock, $50,000; by W. C. Elderton, W. W. Fedder, Warren Gillelen, J. U. Zallee, Jos. Rettigstein, Felix Levy and H. D. Vandeever, all of Los Angeles.

Lakeview Oil Company, Midway; capital stock, $1,000,000; by R. G. Fernald, W. C. Webb, E. Schwab, W. I. Brobeck and R. C. Gurnett.

Cambria Oil Company, San Francisco; capital stock, $2,000,000; by E. O. Allen, D. A. Dodge, Susan O. Harris, J. A. McCorkell and A. E. La Vau, 5 shares each.

The Hawaiian Oil Company, San Francisco; capital stock, $25,000; by R. G. Fernald, E. Schwab, W. C. Webb, W. I. Brobeck and R. C. Burnett, 1 share each.

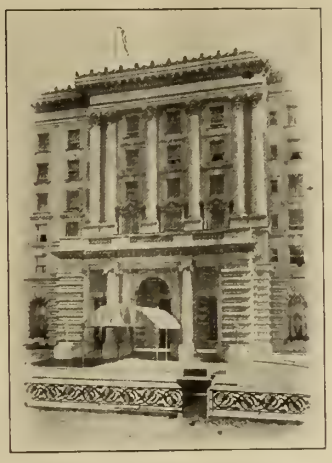
Coalinga Great Western Oil Company, Fresno; capital stock, $250,000; by J. W. Short and B. Reinhold, of Fresno; W. W. Sweet, Milton Feder and C. K. Bonestell, of Coalinga.

Obispo Oil Company, Bakersfield; capital stock, $50,000; by J. W. Barneburg, A. Luchessa, F. W. Vetterline, A. F. Fitzgerald, W. C. Smith, W. C. Oakley and G. M. Doane, all of San Luis Obispo.

Clyde Jackson Oil Company, Los Angeles; capital stock, $1,000,000; by C. Jackson, F. C. Carlson, W. A. Cates, G. Kellogg and H. A. Adams.

CULLEN NOT WITH NORTH COALINGA.

In another column comment is made on the North Coalinga Oil Company. Among the names mentioned as a director is that of J. C. Cullen, of San Francisco. Mr. Cullen states that his name was used in the company's literature without authorization as he simply assisted in the incorporation of the company, resigning immediately after its organization. The unauthorized use of the names of reputable citizens is a reprehensible act and in this instance it goes to show the nature of the general representations made by the company.



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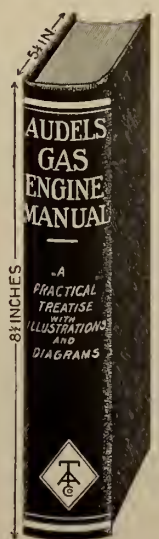

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Chicago Crude	.08	
Claremont		2.40
Esperanza		1.40
Four		.31
Fulton		2.00
Graciosa		.50
Illinois Crude	.28	
Junction		.55
Kern	.55	
Kern River		12.00
Linda Vista		.60
Lucile	9.50	
McKittrick	.07	
Monte Cristo	2.85	
Mountain Girl	.15	
Nevada County		.30
Occidental	.20	
Paraffine	.75	.90
Palmer		1.40
Peerless		6.75
Piedmont	.20	
Pinal	8.50	9.62½
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Rico	3.00	3.25
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Sovereign	.21	
S. W. & B.	.40	.50
Sterling	2.75	2.80
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DIVIDENDS.

Dividends to the amount of $491,666.00 were paid by 29 companies out of 74 listed on the San Francisco Oil Exchange during the month of July, making a total to date of $20,904,788 paid by the companies listed on this exchange. To this may be added something over $4,000,000 distributed by companies on the Los Angeles Exchange, which companies pay approximately $100,000 monthly.

Those distributing profits during the month of July were as follows:

	Rate.	Amount.
Amalgamated	$1.00	$50,000
Brookshire	.02	10,000
Caribou	.25	20,175
Columbia	.00½	4,996
Claremont	.02	9,000
Coalinga Pacific	.10	6,500
Esperanza	.01	3,500
Globe	.01	6,000
Home	.02	2,000
Illinois Crude	.02	4,000
Imperial	.60	60,000
Linda Vista	.01	3,838
Lucile	.10	2,670
Monte Cristo	.03	15,000
Palmer	.02	36,040
Peerless	.06	6,000
Pinal	.15	22,500
Record	.05	5,000
Rice Ranch	.01	3,000
Royalty	.04	800
Sauer Dough	.05	9,975
S. W. & B.	.01	3,770
Sovereign	.01	5,000
Superior	.01	5,000
S. F. & McKittrick	.30	15,000
Union	.50	117,711
United Petroleum	.50	40,375
Wabash	.01	3,000
West Coast, Preferred	2.00	20,816
Total		$491,666

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¶ Oil exceeded gold in value last year by nearly $10,000,000. This year it will exceed gold by more than $12,000,000. The industry is just in its infancy, although it is 24 times greater than it was ten years ago.

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¶ We advised Templar Ranch when it was ten cents. It is now 30 cents. We advised San Francisco and McKittrick when it was $13.00 per share. It is now $25.00. We advised the purchase of Monte Cristo when it was 95 cents. It is now $2.85. Then there was Lady Washington at 10 cents. It is now 50 cents.

¶ NOW IS THE TIME to investigate the oil business, for you will be looking into the face of fortune.

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Vol. 2 San Francisco, Cal., August 1909 No. 4

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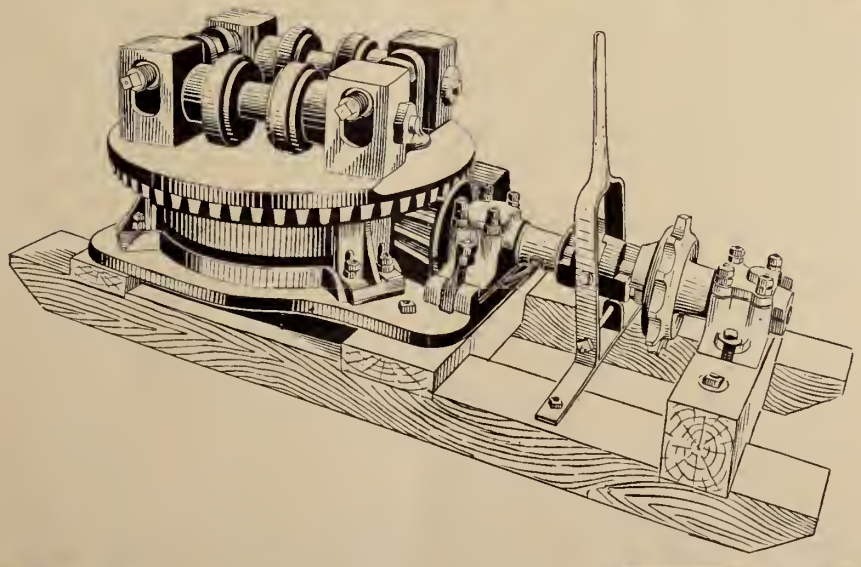

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CALIFORNIA ACCEPTED LEADER IN OIL PRODUCTION

By John J. McLaurin, in the Oil City Derrick.

By leaps and bounds California has become the greatest oil-producing State of the Union, with bright prospects of maintaining its supremacy. A noted geologist predicted this a decade ago, only to be laughed at for his pains. Yet his prophecy has been fulfilled abundantly. Sturdy derricks, crowning hills, and slopes, and dales, are familiar landmarks for many a mile. The oil tank has supplanted the sluice-box and the long-tom of the mining era. Yellow dross gives place to dark, viscid odorous fluid that is revolutionizing industrial methods and is playing a large part in the material progress of the Pacific Coast. From San Diego to Siskiyou one hears much of this new factor in the advancement of the Golden State, home of giant trees, lordly projects, and splendid resources. Everywhere men tip their hats to the lusty infant, realizing that it is here to stay, to grow and to exert an immense influence upon the future of the entire country.

Although the existence of petroleum in California was long known, the early Catholic fathers roofing the missions with asphaltum and Andrea Pico distilling crude seepages in Los Angeles county back in 1855-6, systematic development dates from 1865. At that time Professor B. Silliman, of Yale College, examined a portion of Ventura county, where George S. Gilbert had two small refineries in 1861-2, reporting favorably (and erroneously). Pithole was beginning its mad career, excitement ran high in Pennsylvania, the war had ended and investors were in the proper mood to launch California's first oil boom. Eastern capitalists furnished cash to carry on a vigorous search for prolific territory. Wildcat wells, usually located without sound judgment, went down by whole battalions from Ventura to Humboldt. Excepting a group of shallow Ventura holes, the tests generally proved disappointing. Promoters, expecting gushers, could not feel contented with tiny pumpers, yielding a morsel of oil, hard to handle and little adapted to refining, and operations languished for years. In 1883 Lyman Stewart, of Titusville, and Wallace L. Hardison, of McKean county, successful Pennsylvanians, landed on the scene. They sized up the region, drilled their wells in Pico canon, near the source of Andreas Pico's supply for his primitive stills, and the new Hale district, 30 miles north of Los Angeles, appeared on the map.

Few other attempts at outside development were made until 1892. Then E. L. Doheney and Charles A. Canfield, practical miners, sank a shaft 145 feet in the asphalt beds of Los Angeles, corner of Patten and State streets. A steady producer of heavy oil rewarded their efforts. Interest revived and city lots soon held a myriad wells, the majority profitable. Experiments demonstrated the superior qualities of the oil for fuel, a matter of great importance to California, with wood exceedingly scarce and coal from $7 to $12 a ton. This caused a resumption of activity in numerous sections and brought wild-catters again to the front. The fuel problem had been solved and a real oil boom was on in earnest. Chanslor & Canfield opened the Coalinga field, southern end of Fresno county, and 300 miles north of Los Angeles in 1895. Kern River field, which has produced fully 100,000,000 barrels, Judd Elwoods' modest venture—dug 60 feet with pick and shovel—introduced in 1900. Its extraordinary yield surfeited the market, prices dropping from $1 to 50, 30, 20, 15 and 11 cents for crude. The public was not quite educated to its merits as a fuel; the oil carried a very low percentage of refining products, and disaster overtook a host of enterprising folks. The tidal wave, however, did good service in disclosing rich pools, which might otherwise have remained unexplored, assuring possible consumers a supply equal to any demand.

The low price and manifold advantages of oil as a fuel encouraged its use by railroads, steamships, factories, shops and big plants, increasing the demand to a degree that exceeded the production in 1907: Renewed developments extended the older field and revealed new ones, hundreds of miles apart. To give detailed information regarding these is not the purpose of this article. Later they will be treated with some minuteness, pursuant to the Derrick's intention henceforth to represent California adequately in its columns.

Accurate statistics are not easy to obtain, owing mainly to the unwillingness of various parties to furnish returns. Derrick readers interested in oil will do well to familiarize themselves with the names of the principal fields, the nature, history and location of which will be furnished in due season. The first six—Kern river, McKittrick, Coalinga, Sunset, Midway and Santa Maria—all 200 miles or more north of Los Angeles, seem certain to increase greatly, so that the yield of 158,946 barrels a day may be under the average for the rest of 1909; despite the slow decline along the coast.

Competent authorities believe that the production for 1909 will average above 160,000 barrels per day, worth at least $30,000,000 for the year's output. Petroleum values in 1908 exceeded all other except farms, ($114,954,109); orchards, ($70,159,247); dairies, ($38,608,500), leading gold, ($19,582,464), several millions, and forest products ($162,000). Prices now range from $1 to 63 and 50 cents, with large unexpired contracts considerably lower. Three strong corporations—Standard, Associated and Union—operate extensive pipe line systems, to points on the coast, transporting and marketing the bulk of the output promptly and satisfactorily, railroads

and lesser concerns handling the rest. Other lines are projected and two are in course of construction. The gravity of the oil runs from 11 degrees at Ventura (Ventura oil is of high-grade refining quality, running from 25 to 30 gravity instead of 11 as stated by Mr. McLaurin.—Ed.). Summerland and Los Angeles to 14, 16, 17, 20, 22 and even 24 degrees, lighter crude at Midway and in the eastern division of Coalinga toucbing the latter mark. It is black, often resembles tar in color and consistency, and must settle and much of it be heated before piped, to get rid of the sand and water. Sunset crude beats the world for oiling the roads, a common practice in California, laying the dust effectively. Thirty-two refineries of all grades and sizes, eight of them in Kern county, from two stills at Carpenteria to the Standard's nine million mammoth at Port Richmond, treat the oil according to their equipment. Nine-tenths of them turn out asphalt, prime for streets and sold readily, and distillates utilized by gas companies, the residuum making excellent fuel.

Wells vary in depth from 250 feet, in some cases, on the coast, to 1,000 and 1,200 feet around Bakersfield, 1,500 to 2,000 at Midway and 2,800 to 3,300 feet at Santa Maria. One at Rosemary, in the Sherman bunch, between Los Angeles and Santa Monica, is 5,330 feet towards the antipodes, in a sand showing oil. Strata consist of shales, clays and sands, liable to cave in, easily pierced and frequently dipping at angles to bewilder Pennsylvania operators accustomed to harder and more nearly horizontal formations. To prevent caving and exclude water, great strings of casing are required, involving heavy expense and tedious delays, such as a stop of 30 days each time a hole is cemented to let the stuff set. Lumber is dear and the ordinary rig costs $1,500 before the tools are swung. Expert drillers command from $6 to $8 per day and board, about twice the wages paid the helpers and pumpers. Probably California is the only spot on earth where hundreds of drillers, pumpers and field employes own up-to-date automobiles, drive the machines to and from work, take long trips, and enjoy to the utmost the touring car or runabout their willing hands have earned. While living is comparatively cheap and the climate delightful, the enormous cost of sinking wells—$10,000 to $60,000—renders the Golden State not a field for the individual operator of scanty means.

KEROSENE VERSUS GASOLINE.

Commenting on the report that kerosene will be used as a fuel in the 1910 models of steamer automobiles, our Chicago contemporary, The Paint, Oil & Drug Review, says:

"This is the first time that automobile concerns have been able to recommend any fuel other than gasoline and the innovation is of no mean significance. It has many times been predicted that, with the number of automobiles constantly increasing, there would soon come a time when it would not be possible to produce sufficient gasoline, at least at anywhere near a reasonable price. As the price of gasoline has been steadily rising, this prediction is probably well founded, and, therefore, the announcement that a maker of cars can practically dispense with gasoline is of far-reaching importance.

Kerosene as a fuel possesses many advantages over gasoline. In some sections of the country its cost is from one-half to one-third that of gasoline, and it may be obtained anywhere civilized men dwell, because it is in universal use as an illuminant and it can be stored anywhere and handled with imunity. It also is more efficient than gasoline as a fuel, in that a gallon of kerosene contains about 15 per cent more heat units than a gallon of gasoline. One leading company has been working for ten years, or ever since they commenced to manufacture automobiles, on a coal oil burner. It was not until the last few months that it was developed to the point where the company felt that it could recommend kerosene as fuel for their cars. An important feature of the new burner is that it may readily be adjusted so as to burn gasoline if for any reason it is desired to use the latter fuel."

THE STANDARD AND GALICIA.

We have heard a great deal of late as to the agreement which has been entered into by the Galician oil producers and the Standard Oil Co., that to now be told that the arrangement is "off" seems to be almost incredible. The latest news from Galicia, however, is re-assuring upon this point. By the action of several of the Government's ministers, a convention has heen held, when the whole transaction was stopped almost at the very signing of the agreement. The Austrian Government brought all its influence to bear upon the union of oil producers to dissuade it from signing the agreement, and not only that, but they persuaded it to enter into friendly relations with the refiners, whose past policy seems to have inclined the producers to favor the agreement with the Standard. As a result of the convention above referred to, the Government has now undertaken to construct crude oil reservoirs with a combined capacity of one million tons, and in these tanks, six hundred thousand tons will be stored by the Government free of rent. A bill has already been brougbt into parliament authorizing the immediate commencement of the work, so that the Government is in thorough earnest to pull the Galician petroleum industry out of the present crisis, there is not the slightest doubt.—Petroleum Review.

CRUDE NAPTHA PLANT.

Design to Conserve Volatile Products of Storage Oil.

The Ohio Oil Company has begun building a plant at the Martinsville, Illinois, tank farm for distilling the naptha (distillate) from the crude oil received at tbe farm. The plan is to distill the naptha and then pump it with crude oil to the refineries at Alton or other points, where it will be redistilled, deodorized, etc., ready for the market. The demand for gasoline and other grades of naptha, Mr. Loftus said, is in excess of that for other products of petroleum and it is to meet this demand that tbe Martinsville plant was decided upon.

After taking out the naptha the remainder of the oil will be drawn from the stills and pumped into the large storage tanks to await demand for the heavier products. Mr. Loftus said the battery of stills to be installed at present will be sufficient to bandle about 25,000 barrels a day, to be increased if expedient or necessary.

The operation of this plant will save a large amount of tbe more volatile portion of the oil that would evaporate during long storage in large tanks and will, at the same time, eliminate much of the danger of fire by lightning or other means. With the naptha removed, the oil will give off little or no vapor even when heated by the sun.

MID-CONTINENT OIL FIELDS.

During July the Prairie Oil & Gas Company put into tankage 128,462 barrels of oil, a daily average of 4,144 barrels. This is a marked decrease from June, when 325,004 barrels were put into tankage, a daily average of 10,833 barrels. There was also a marked decrease in both runs and shipments during July, as compared with June, due largely to the break in the lines caused by the flood in Grand river. Thus the average runs for July were 60,380 barrels daily; for June tbey were 81,416 barrels. Deliveries for July, daily average were 56,236, while June tbey averaged 70,582 barrels daily. In June a total of 325,004 barrels were put into tankage, and in July 128,462 barrels. But in the second week in July stocks were drawn upon 60,116 barrels owing to the washout of the lines at Grand river.

August, provided it be free from accidents, will give a better showing of the Mid-Continent conditions. The runs and shipments will bear a true relation to each other and to the conditions in the field, though the Oklahoma law operates to prevent extension of pipe line facilities.

HOW IT IS DONE IN KANSAS.

In connection with the first of the recent cuts in western crude prices the Chanute, Kan., Tribune offered the following comment on the change, and, although prices have lowered since then, the article has the same revelancy to present conditions, as relating to Kansas producing and refining interests:

There has heen a cut of three cents a harrel in the price of crude oil in the Chanute field, following a similar cut made hy the Standard Oil company in the Mid-Continent field.

The cut was made hy the independent refiners, who take all the oil produced in this vicinity. At that, the refiners are paying 12¼ cents more per barrel than the Standard price.

The Standard has eliminated the gravity basis, which it estahlished to punish the Chanute producers for their activity and has returned to its original system of good and heavy oil.

It counts all oil at 30 degrees gravity or better refining oil and all oil of lower than 30 degrees gravity heavy or fuel oil. The price it pays for refining oil is 38 cents, and for fuel oil 28 cents.

The Chanute refineries pay 49 cents a harrel for all oil of 31 degrees or hetter. To this differential of 11 cents should be added the 3 per cent. which the Standard makes for water in oil. The Chanute refineries make no such deduction.

It was thought at first that the change in the Standard's schedule meant that the octopus would endeavor to win hack some of the husiness which it has lost in Kansas. Refiners and producers alike douht this.

The producers say that the change is intended as a hlow at the Oklahoma producers and is the point of a wedge which the Standard has started to drive for the purpose of splitting the independent producers wide open and ohtaining control of their production itself.

The refiners say that they were compelled to follow the Standard's cut—that the prices of all refined products have decreased 50 per cent within the few years since they began husiness, and that notwithstanding this they have maintained a differential of more than 12 cents between the prices that they paid for crude and the prices that the Standard paid.

The Standard, however, hy aholishing the gravity schedule, has put itself in shape to fight the refiners hard when it is ready to do so. The gravity plan was devised in the beginning to discipline the Chanute producers.

The latter, rebellious against the treatment given them hy the Standard, started a hack fire while the 1905 legislature was in session that swept the State. Public indigation was aroused everywhere, and telegrams and letters poured in upon the lawmakers when they went to Topeka, asking them to take up the gage thrown down by the octopus and pass laws that would protect the independents and cause the Standard to he decent.

The result was that the anti-discrimination law and the maximum freight law were passed, and the State came near going into the oil refining husiness.

The Standard had announced that it would take none of the Kansas crude hecause it was not fit for refining purposes. When it seemed that the State was ahout to start proceedings to drive the octopus from its forders unless it agreed to do husiness here, the Standard announced the gravity basis as the one upon which it would huy Kansas oil.

Under this hasis a difference in the price was made for every half degree difference in gravity. Oil grading 32 or better received the top price, and the schedule then graded off to oil of 28 degrees gravity.

Now all this has heen done away with. The ruling that oil of 30 degrees gravity or hetter shall be considered refining oil lets the Chanute field inside the Standard's refining oil district, and when the Standard hegins to raise prices, as it will certainly do eventually, after it has ohtained the production it wants, it will have the way all cleared for coming in and fighting the independent refiners for husiness here.

DISCOVERS OIL AT RICHMOND.

Working quietly on the discovery of oil made in the East Richmond district to the north of Berkeley, in Contra Costa county, a number of Berkeley capitalists have formed a company for the working of two large oil wells and are now at work on the ground taking out the oil. The company has gone secretly to work, and in a district in which it was not suspected that oil existed, have made soundings and have then taken up acres of ground. They have now secured all the capital necessary for the work, and the East Richmond Oil Company is at work right under the eyes of the Standard Oil Company's works at Richmond.

There have been rumors ot the discovery of oil in the district, but no definite announcement has been made on the subject. It was learned today, however, that following the first soundings and the driving of a well the workmen lost a string of tools in the depths of a huge well of oil by suddenly driving into it. E. Everett, an oil expert, was called in, and pronounced the product of fine quality and the find of the highest commerciai value. The company was immediately formed, with Sutton, a Lompoc oil man, as president, and J. Shapiro, D. W. McLaughlin and John Bouquet among the controlling members and stockholders.

The company declares that it will run independently, and that it will supply oil to the Standard Oil Company's works at Richmond, or to any other consumers. The opening of the works to pump oil at this point comes with especial interest, as the announcement was made a few days ago by the local agent of a large oil concern that huge steel tanks are to be erected in West Berkeley in the near future as the first unit in the installation of an oil works.

OIL INSTEAD OF GAS AT JOPLIN.

The proposition to pipe fuel oil from the mid-continent oil fields to the Kansas-Missouri zinc region comes as a timely solution of the increased oil outlet on the one hand and a reliable fuel supply on the other. It appears that the natural gas rescources are uncertain and declining and that some suhstitute for gas must be secured for use at the zinc mines. The gas pipes are laid and so hecome available for oil, if oil is to he suhstituted for gas. The way, therefore, is open for the speedy adoption of the new fuel, and it is believed that this change will he effected. Thus relief may be afforded to hoth oil producers and fuel users.

The question of finding a market for the great abundance of crude oil that is coming to the surface in the mid-continent field is very largely a question of transportation. If the field could he adequately supplied with pipe lines in every direction the oil will soon find an outlet. But shut in as it has been it accumulates so rapidly that no sale can he had at any price. The low prices made hy the pipe line companies are merely the result of a glut on the market, and to relieve that glut the producers should join hands in a concerted effort to provide increased marketing facilities.

SHIPMENTS GREATER THAN PRODUCTION

Gulf coast productions on July 31 was estimated hy the Oil Investors' Journal at 32,095 barrels, as against 34,655 harrels June 30, and 36,425 barrels June 15, indicating a decrease of ahout 4,300 harrels in daily output within thirty days. Southeast Texas, on July 31, was producing 22,908 barrels as compared with 26,610 barrels June 15, and 25,415 harrels June 30; Louisana's output July 31 was 9,165 barrels, as against 9,815 barrels June 15 and 9,240 harrels June 30. The shortage in July amounted to 276,473 harrels.

Runs and shipments of the Pennsylvania, Ohio, Indiana and Illinois fields in July averaged daily about as follows: Runs, daily average, 143,799; shipments, daily average, 192,756.

THE STUDY OF PETROLEUM AS A SCIENCE.

By Paul Kovitz, in Petroleum Review.

In these days the extensions of industry have grown so multifarious that specialism has become an indispensable condition to a thorough mastery of a subject. What were but a few years ago regarded as waste products now occupy important positions in manufacturing processes and call for specific attention and treatment. The division of labor has been regarded by economists as one of the factors making for the best and most prolific production; the division of studies may similarly be held to answer the same purposes in regard to the scientific aspect of industry. It is this, in fact, that has brought science and industry so close together and made them so dependent one upon the other, while it is the recognition of this union which has brought technical education so prominently before the public, and in a number of cases has assisted in the formation of classifications, nomenclature, etc. Still there exist, even now, some very important departments of industry which have not yet been thoroughly brought within the scope of an educational curriculum, and in this direction may particularly be mentioned the study of petroleum.

The subject of the occurrence, the production, the characteristics, and the treatment of petroleum is a very wide one, yet there are very few who know it in its entirety. As a matter of fact, the petroleum expert has no recognized scientific status. The addition of such titles as F.G.S., F.I.C., F.C.S., to a name, indicate a certain chemical and geologic knowledge, but per se they are no indication of the bearer's fitness to advise or report on petroleum lands and petroleum products. His status is merely a connectional one, so to speak. A man may be deputed to investigate a certain district for petroleum, almost his only qualification, so far as practical and profitable results go, being that he holds the recommendation of a man who has obtained a high position in the scientific world. If this subject was put on an academic footing and students who had passed through a certain course, entered for, and passed certain examinations, were provided with credentials testifying to their scientific proficiency, such a thing as that referred to above would rarely occur.

For our present purpose we may divide the subject into two parts, viz., the geological and the chemical. These, at least, can to a certain extent be brought within the limits of the lecture room and the laboratory, and although the further treatment of petroleum in its refining processes can be partially dealt with, a thorough knowledge of their management requires practical experience in the refinery itself, just as the engineering student must go to the actual workshop to gain that facility requisite in the practical application of the theories learned and illustrated in the lecture room and the technical classes.

In regard to the geologic side of petroleum, although there are conflicting opinions among those who have, perhaps more practice than science, the man who has studied this branch of the subject under one who combined the two, is far better equipped than if he depended on theory and book-learning alone. In fact, in its geologic occurrence petroleum requires, perhaps, closer and more careful study than does the geologic occurrence of minerals. The evidences of its presence are more elusive than in the case of, say, coal, and its disposition is more misleading and more subject to physical forces than the solid minerals. Consequently the subject is one which deserves the closest attention on the part of the student, who is bound to find its serious study deeply interesting.

Today, as we know, the science of chemistry plays an increasingly important part in the petroleum industry, and the fact that so many of our great professors have devoted almost a life-long study to the subject, at once shows the vast opportunities which are before the diligent student.

As to the chemical side of the subject, this leads itself more to the laboratory than the geologic, and it is scarcely necessary to enter into the details of treatment, as it would naturally run on the lines of chemical investigation already in vogue in the best classes and laboratories of the country.

This, then, appears to us to be one of the great requirements of the present time in regard to the petroleum industry. Every branch of science and industry benefits by the introduction of new blood and new brains, and this seems to be the most sure, most effective and profitable manner of achieving the purpose.

Unfortunately in this country, it has been impossible during recent years to closely study, as a student, the various important and at the same time interesting phases of petroleum science. Eight years ago, Dr. Dvorkovitz founded the Petroleum Institute, in order that many young gentlemen might have a means provided of obtaining a thorough training in the various branches of petroleum science, and the success which was accorded the movement at that time has led Dr. Dvorkovitz to resuscitate the organization.

The Institute will therefore re-commence its labors toward the end of the present year, and at the present time a highly attractive series of lectures is being arranged, which will in all probability be held in one of the halls in the west end of London. The possibilities and scope of the Institute's work are great, but no greater compliment can be paid to the principal and founder of the Institute as to the usefulness of the organization, than that which is carried in the number of requests received so far for membership. The Petroleum Institute, without a doubt, fills a long felt want, and is bound to be of inestimable service in fitting young men for a career, which should be of the greatest possible value, not only to themselves, but to the entire community at large.

SANTA MARIA DEVELOPMENTS.

One of the most remarkable records made by any company operating in the field is that of the Los Alamos Petroleum Company.

This company was organized about a year ago without any flourish of trumpets and has proceeded along quietly but in a most business-like manner securing and erecting one of the best rigs in the field.

About fifty days ago the well was spudded in on what is known as the Rossi tract and under the able management of superintendent John Doherty has been pushed steadily and carefully along until now the drill has passed entirely through the sand formation and is in blue shale at a depth of something over eleven hundred feet with a 12½ inch hole and everything points to a complete success for this well as an oil producer. The Ideal company struck the blue shale at a shallower depth than the famous Palmer well while the Los Alamos has found the same formation at 80 feet nearer the surface than the Ideal.

In the immediate vicinity of this well the Oro W. L. & P. Co. down is about 2550 feet with the drill in oil, this well is just west of the Los Alamos while on the north is the Ideal down about 1500 feet in shale and to the southeast about three-quarters of a mile is the famous Palmer well, in fact, the Los Alamos Company's lands are so located that with the present progress the stock holders have every reason to rejoice at the prospects of dividends on their investment.

A deal has been consummated by which about 900 acres of the Richard Holland lands east of the Cat Canyon district and between Stendel and Foxen holdings pass to the Associated Oil Company. Mr. Fred Tillman, who has held the option on these lands for some time having finally closed with the Associated. Soon derricks will be erected on these lands and the work of development commenced.—Graphic.

Ramona Applies for Franchise to Pipe Gas.

Charles W. Gregg, president of the Ramona Oil Company, of San Francisco, has made application for a franchise to the city of Petaluma for the purpose of piping gas from its well about four miles southeast of town and supplying that product to the various demands in and about the city.

About two months ago the Ramona, drilling for oil, struck gas at a depth of 800 feet. The flow was something enormous, estimated at around 5,000,000 cubic feet a day. Exhaustive tests have been made in the meantime and the final determination of more than one gas expert is that the well has settled down to a permanent basis of close to 800,000 feet of the purest gas known to exist anywhere in the world. The officers of the company have been reticent about giving information regarding the gas flow as they desired to be absolutely sure that, after time had been given for tests and determinations, the well would prove to be what they hoped it might be.

As it now stands, the Ramona apparently has one of the finest gassers in the country, the first permanent one in California. The purity of the gas is beyond question. The well is absolutely dry, no moisture being apparent. The gas gives out a blue flame that is practically odorless and smokeless.

The editor of the Petaluma Argus visited the well a short time ago and we give herewith his description of what he saw and heard:

"A rough shed covers the well, being built about the base of the derrick. Immediately upon entering the shed the sound of escaping gas is faintly heard. Approaching the capped well, the sound becomes more distinct, like the rumbling of distant waters. A very slight odor of gas is noticeable. However, it was very quickly demonstrated that considerable gas constantly escapes from the well, for when Mr. Gregg poured a quantity of water into the cup-like top of the cap, the escaping gas caused the water to bubble as though it were at boiling point—this, in spite of every effort known to the plumbers' art, white lead and all, to confine the gas in the well.

"But the real illustration of the fact that an immense quantity of natural gas is stored in the unknown depths of the earth and pressing with tremendous force to escape from captivity was demonstrated later. A two-inch pipe extends from the well through the north wall of the shed, probably twenty-five feet. At the outer end of this pipe is a valve. When this valve was opened and the gas allowed to escape, the writer was standing a few feet away. An instant later he was some fifteen feet away and had his hands over his ears to shut out the noise, which was deafening. The gas escaped from the two-inch pipe with a rush and a roar that was not only deafening but astounding. Nothing could be seen except an occasional misty vapor that was gone immediately, and there was very little odor. Little pieces of wood dropped at the pipe outlet would be instantly caught up and carried through the air a hundred feet or more. The gas was permitted to escape for some minutes, during which period of time the roar and rush of the mysterious pressure seemed to grow greater rather than to diminish. When the valve was closed, the quiet of the open country was welcome to overtaxed ear drums."

During the early part of the month the country for miles around was brilliantly illuminated by the burning gas and another illumination much greater than the first is planned for the near future in order to demonstrate to the eye that Petaluma has a big gas well capable of furnishing an unexcelled quality of illuminating and fuel gas in sufficient quantities to supply a town of four or five times the size of Petaluma.

The Ramona company has firm belief that oil will also be found on some portion of its 2,000 acres of ground and another well has been started about a mile distant from the gasser. The Parker rotary rig is making rapid progress and it is expected a depth of 1,500 feet will have been reached within thirty days.

On an adjoining property the Bonita Oil Company will sink a well, work to be started this month. A considerable acreage has been leased and it is likely that several wells will be drilled. This company is organized with 1,000,000 shares and the officers are: J. W. Ashley, president; Charles W. Gregg, vice-president; Irwin R. Broughton, secretary. The offices of the company are at 900 First National Bank Building, together with the Ramona.

Within the past few days the Standard Oil Company has filed its articles of incorporation in the county, presumably with a view to immediate operations. The Standard has been very active within the past two months in its efforts to secure ground but, as its acts are veiled in much secrecy, it is not known what success has thus far been attained. Immediately following the discovery of gas in the Ramona the Standard sent several men into Petaluma to secure leases and the filing of its papers in Sonoma county can mean nothing else than that the Standard intends to do business there.

OREGON OIL FIELDS.

The Mammoth Oil and Gas Company of Union, Oregon, has just issued a statement to its stockholders covering its operations in the Malhuer county district, eight miles south of Vale. The company was organized October 3, 1908, and work started April 12th. A depth of about 900 feet has now been reached. The formations passed through are extremely favorable to the development of a new productive field. Two other wells are being drilled in the field with good prospects. Of the indications the report says:

"The various formations through which the drill has passed are similar to those found in producing oil fields. At a depth of 430 feet quite a strong flow of gas was encountered. At 640 feet the drill cut into a light gray sand. This stratum, which was about 60 feet thick, gradually changed into a black sand which carried traces of oil and more gas. At the present depth the indications are much better. Oil can be seen on the water that comes up in the boiler and the rope and tools are coated with it."

Through the efforts of the company and others interested in the field the Secretary of the Interior has withdrawn from all forms of entry all of the land now located as oil land, aggregating 75,200 acres.

The Mammoth has located 768 0acres and proposes to thoroughly protect the ground by drilling. The company's officers are: John L. Jacobs, president; J. H. Hutchinson, vice-president; M. F. Davis, secretary; T. W. Davidson, manager. Most of the capital is being furnished by local people who have great faith in the outcome. Should oil in commercial quantities be struck, and there is every reason to expect it will be found, Malhuer county will see a large amount of other development started and a new and extensive oil field opened up.

OIL IN DEEP WELL.

The Union's deep well in the Rosemary field has now reached 5368 feet. The company has not decided yet whether or not a well can be brought in, but fine oil of 35 gravity rises to the surface of the water. There are 26 feet of sand yielding this oil and drilling will be continued for an indefinite period. Until the well is finished no attempt will be made to test it by removing the water for fear that the casing may collapse if the internal pressure is removed.

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A FOUR BILLION DOLLAR INDUSTRY.

According to measurements more or less accurate of the volume of petroleum existing in the known fields of the State of California there are approximately four billions of barrels. The exhaustion at the present rate of production is a billion barrels every sixteen or seventeen years and the supply will last a little over sixty years. The next few years will undoubtedly see an increased production, which may reach one hundred millions a year or a billion in ten years. One thing is certain, the maximum production has not as yet been reached.

The point of this article is to show the practically known value of the petroleum product within California's borders. The sum is something enormous, little realized by many people and scarcely appreciated by the public generally. A fair estimate of the value of this oil when it reaches the surface is $1 per barrel, making the enormous total of four billions of dollars.

But this is by no means all the oil that will be found. By extensions of the proved and productive districts, and by the opening of new fields, considerable amounts will be added. This, however, is problematical, but it is safe to assume that new bodies of oil will be discovered in sufficient quantities so that it can be figured that the oil product of the State will amount, net, to the present estimates of the government geological survey. In other words, we will have available fully four billion barrels.

There is but little question that oil will advance rather than decline in the future, barring, of course, fluctuations that will likely occur by reason of general conditions and manipulation of the markets and other things that always are amenable to powerful influences.

In view of the greatness of this industry the time is not far distant when the territory will be practically owned or controlled by a few big corporations, perhaps one big corporation, but the time for cheap prices for land has passed and big prices will be paid for it as time goes on.

Up to January 1, 1908, the total value of all the oil produced in the United States was $1,654,877,685.00, an average of a little less than $1 per barrel. This amount is the approximate sum received by all the producers of the United States right at the well. The profits derived from the product by the Standard and other marketing and refining companies can easily be estimated at several times that amount.

In fifty years the petroleum of the United States has brought to the producers nearly $2,000,000,000, but in California alone there is petroleum yet beneath the surface worth more than double this amount. Such figures as these show the industry to be one of the greatest possessed by any State. Nature has indeed provided bountifully for California, and she will profit thereby to the extent of billions of dollars net proceeds.

It is no wonder that large dividends are paid by California oil companies or that these will be materially increased in the coming years. With this vast amount of oil lying underneath the surface it is no wonder that millions upon millions of dollars are being spent in the purchase of oil-bearing ground; in the equipment of properties and the boring of little holes in the ground through which the oil will find its way to the surface.

A SLIGHT MISAPPREHENSION.

Dr. David T. Day's prediction that the present known petroleum deposits would be practically exhausted within 25 or 30 years has aroused a storm of protest and criticism, some of which descends to ridicule. Among the latter class of critics is the California Oil World, which says Dr. Day is wrong according to his own figures. Had the editor done a little figuring he would not have been quite as captious as some of the effete eastern journals, from whom he evidently secured inspiration for his "original" editorial on the subject.

To those who know of the principle of arithmetical progression Dr. Day's estimate is not far wrong, and we can overlook the conclusions of his critics, excusing them from a standpoint of lack of knowledge of this common principle.

Dr. Day has heretofore estimated the amount of petroleum as being ten millions of barrels, of which two millions have been brought to the surface in the past fifty years, leaving eight billions of barrels yet to be produced. His critics ridicule him for saying this would be exhausted in twenty-five or thirty years, because, they say, "it does not require an inordinate knowledge of mathematics to arrive at the correct result from a computation based upon these figures. The answer is, two hundred and fifty years."

If we were now producing at the 50-year rate, 40,000,000 annually, Dr. Day's critics would be correct, but as a matter of fact, we are producing at five times that rate or nearly 200,000,000 barrels per year, California alone producing nearly at one and one-half times the average.

In the years 1899 to 1908 inclusive, the last 10-year period, we produced 1,142,000,000 barrels, while for the entire forty previous years only 658,000,000 barrels were extracted, an average for ten years of 114,200,000 barrels as against an average of 16,450,000 barrels for the previous forty years.

The United States is, therefore, exhausting its supply five times faster now than the 50-year average. It is producing as much now in ten years as it has produced in the first fifty years. The criticisms, therefore, of the Oil World's "Dolorous Dr. Day" fall of their own weight and the scientist has the laugh on his unthinking friends, who themselves become the subject of ridicule.

Provided the present rate of productions, 200,000,000 barrels per year, is maintained, it will take forty years to exhaust our present known supply of petroleum, and if the production is increased as rapidly in the next ten years as it has in the last period, it does not "require an inordinate knowledge of mathematics to arrive at the correct result based upon these figures."

There is every likelihood that new oil fields will be developed, thus prolonging the life of the industry, and there is no knowing just how extensive these fields may be. It is to be hoped that they will be large, but that makes no difference as to the correctness of Dr. Day's prediction based upon present knowledge of known oil producing sections.

In fact, at the present rate of production in California, 60,000,000 barrels per year, the supply of this State will last about seventy-five years, but with the natural increase in demand as eastern fields are exhausted, there will naturally be an increased supply if it is possible to secure it, and it would not be surprising to see a production of 100,000,000 barrels annually in California within five or ten years with a large and permanent increase in value. As stated last month in the Derrick, California need not fear exhaustion of its oil fields for many years to come. The industry will grow more and more prosperous from year to year and California may expect to get several billions of dollars from its

petroleum resources before the last barrel is brought to the surface.

However, California oil operators, in order to secure the largest financial results, should bear in mind Dr. Day's warning and act accordingly, conserving the supply as much as possible in the future and not be too anxious to produce and sell the maximum amount possible at 60 cents per barrel because oil will soon be oil and worth $1.00, then $1.50 and $2.00 per barrel, and may be more in the not far distant future.

SEVEN MONTHS AHEAD.

Last December the Derrick published practically the same figures for the production of oil in California as did the State Mineralogist, Lewis E. Aubury last month. Our figures placed the production for 1908 at 48,000,000 barrels. Aubury gives about 300,000 barrels more. We made a careful estimate for the year based upon inside information, and we reached a conclusion which is half way between the amount given by Aubury and the official figures as compiled by the independent agencies which show 47,685,000 barrels, not including small productions from a few scattered districts.

The California Derrick was the first paper to publish the figures as compiled by the agencies and to pave the way for the publication of monthly statistics. Hitherto it had been impossible to secure accurate or official information along these lines. When we said the production for 1908 was 48,000,000 we knew what we were talking about.

GOLD DOLLARS FOR FIFTY CENTS.

The Standard Oil Company announces its willingness to buy a dollar's worth of oil for forty cents. Who wouldn't be willing to buy gold dollars at forty cents?

How about the fellow who parts with his gold dollar for the market price of a Mexican dollar? Is he lacking in business sagacity or what? The answer will soon be known and will be told by the amount of oil the Standard secures at this figure. It is lucky indeed for California operators that they are not at the mercy of Standard Oil as are eastern producers. The place for forty-cent oil is in the ground. It is worth more in the ground than on the surface and those producers who are afraid of the future will be the only ones to sell.

With everybody else paying from 60 cents to $1.25 for oil it looks very funny for the big company to go into the pawn brokerage business. But there may be a reason. Time will tell.

STANDARD OIL PAPER DISCUSSES CALIFORNIA CONDITIONS.

The Oil City Derrick, of Oil City, Pennsylvania, attempts to explain the course of the Standard Oil Company in offering producers 40 cents per barrel for oil in California, but gets a little mixed on its data, from which conclusions are drawn.

For instance, it says oil in California competes with coal at twelve to fifteen dollars a ton, while Mid-Continent oil competes with coal at two dollars a ton. The Standard offers 40 cents for low-grade California crude and 35 cents for Mid-continent oil. In the event that the comparative prices for coal were correct, which it is not, then California oil should sell for about six or seven times the price of Mid-continent oil. It says the Standard is offering as much as it thinks oil is worth under present conditions. There are others who think oil is worth fifty per cent more, and if it is actually worth it to others why, in the name of common-sense, is it not worth as much to the Standard? Cannot the Standard do business unless it can get oil at an enormous discount?

As a matter of fact, producers in the Mid-continent field are at the mercy of the big corporation. California producers are the arbiters of their own business and today California is an example of an independence never before attained since the Standard was organized. That is the reason California gets double the price for its product that is paid to eastern producers, and they are going to get more. If the Standard wants oil, and the company is likely to remain in business for some time to come, it will be forced to buy it at something like what others are willing to pay. Fortunately, the Standard doesn't make the price in California. If it did we would see 20 cent oil.

It cannot force down the selling end of the market and compel producers to stand the brunt of it in California. It can do it elsewhere.

Another thing in which our contemporary is somewhat mistaken is when it says "the production is outrunning the demand." The present facilities for transportation are limited and a surplus is being created to meet a demand that could not possibly exist if there were not a few day's supply ahead with which to fill such demands. The present surplus is a long ways from being an over-production.

What the Derrick, the Standard's special pleader, says is as follows:

"California is in much the same plight as the other great fields west of the Mississippi river and of the Illinois field to the east. The production is outrunning the demand. The Associated and Union companies, which operate almost exclusively on the contract system, are preparing storage to care for their surplus and are paying what their contracts call for. In this country the Standard does not deal in futures and makes no contracts for a long time ahead. We presume the same policy exists in California. It buys and pays spot cash for immediate delivery. It simply offers 40 cents a barrel for any oil the producers have for sale. That represents its estimate of the value of the stuff for its purposes under existing conditions.

"This price offered in California is better than the price in the Mid-Continent fields, though the oil is of a very inferior grade. California is really getting the better of the conditions. But the difference is one of location. Oil in California competes with coal at twelve to fifteen dollars a ton, as a fuel, and finds its market at home. Mid-Continent oil, as a fuel, competes with coal at two dollars a ton. It has no ready market at home and must be transported long distances to find one. It is hampered, too, by legislative restrictions on the commercial agencies which are trying to get it to market.

"For the remainder, it is the historical fact that producers have fared best where the Standard Oil Company has been in control. They have had the best price for their product, in the long run, and it has borne a closer relation to the market for refined. An examination of the statistics will prove this assertion, especially a comparison of the prices during the speculative era and the time following the closing of the exchanges. We believe its price in California accords with the actual conditions touching supply and demand."

EL CERRITO HAS 160 FEET OF SAND.

The El Cerrito has 160 feet of oil sand and shale. How prolific this is is not known, but considerable quantities of oil come up through the water. The hole is between 3900 and 4000 feet in depth.

And now comes the Navy department of the United States government with instructions to erect oiling stations at different strategic points around the Pacific Ocean. Another big outlet for California oil. Who has the contract for furnishing the goods? The Union, the Associated or the Standard? Will the government, in the face of recent investigations, have the temerity to deal with the last two companies mentioned? It looks like the Union. Wait and see.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

The production of Coalinga for the month of July will approximate about 1,380,000 barrels, the members of the agency producing 246,000 barrels, an average of 8,000 barrels a day. This is the largest amount produced in a single month by the agency. The Standard runs for the month were 532,425 barrels, a gain of 8,700 barrels over the month of June.

Developments have progressed on the new lines of the Producer's Transportation Company so that oil will be flowing into the big tanks before the end of the month. This will relieve local storage to a considerable extent.

The Southeastern Limited, in the eastern portion of the field, has its well down something over 1,900 feet with its rotary rig. So far no casing has been used and the hole is a fifteen-inch one. While the oil sand is expected at a depth of between 3,500 and 4,000 feet it is possible that it may be found at less depth. San Francisco people are behind this proposition.

The American Petroleum property, which has been producing something like 7,000 barrels a day for some time, has settled down to a steady output of about 5,000 barrels daily. The company recently increased its capitalization to $10,000,000.00.

In order to provide field storage for its oil the Associated has given orders for the erection of two 55,000-barrel tanks. Heretofore there has been a lack of facilities for this purpose.

Five miles of pipe have been laid from Coalinga for the Producers' Transportation Company, and rapid progress is being made on the eight-inch line. Including the ten-inch feed line more than ten miles have already been put down. The work is going ahead at the rate of nearly a mile daily.

British Consolidated operations on its various properties are going ahead rapidly. C. F. Humphrey, who engineered the deal whereby the company became interested in the Coalinga field, visited the properties a few days ago and was much pleased with the outlook. On the California Diamond, well No. 1 is down about 500 feet with 16-inch casing. This well is the second No. 1, as the first one was converted into a water well. On section 6 everything is in readiness to go ahead with drilling. On section 26 the work on No. 1 has been delayed on account of non-arrival of tools. Well No. 2 is being redrilled, as the water which was cemented off did not remain that way and the casing is being carried down to about 2,600 feet before another attempt will be made to shut off the water.

The Coalinga National, operating on the south half of the north half of section 8, 20-15, is erecting a derrick and expects shortly to start drilling under the direction of S. R. Bowen, one of the directors of the company.

A rotary rig has been started on section 25 and a depth of nearly 1,000 feet attained by the Kern Trading and Oil Company, the Southern Pacific's subsidiary development company. Another one will shortly be started on the same section. Three new wells are to be drilled on section 19, two on section 2, four on section 25, and one on thirteen, making ten in all. This is done principally to protect its lines.

The Blue Moon is down approximately 2,100 feet; the Empire has gained a depth of over 2,000 feet with ten-inch casing; the Esperanza Land and Oil Company has put in over 1,300 feet of ten-inch casing.

The work of cleaning out the sand in the Coalinga Aladdin on section six, adjoining the Lucile, has been in progress for two weeks or more, and the well is now practically ready for a steady production. Estimates of its capacity place the number of barrels daily at the start at from 500 to 1000, which practically duplicates the Lucile.

No. 6 of the New York Coalinga is drilling and rapid progress being made. Jim Shreeves, the superintendent, will make another well in record-breaking time.

No. 1 of the M. K. & T. is near being finished. It is down about 2850 feet and is in the sand. Manager DeLong expects to have a well very shortly. No. 2 is down 2800 feet with ten-inch casing and will soon shut off the water.

The People's Associated is down 2400 feet and is now drilling in a combination of blue clay and shale. 2307 feet of ten-inch casing is in. The management is pleased with the prospects of getting oil.

The Los Angeles-Coalinga Syndicate, which is soon to begin drilling on section 6, 21-15, is equipping its lease as well, if not better, than any in the field. Two 65 horsepower boilers have been installed and the derrick, which is extra heavy, is equipped with a metal crown block. Very comfortable offices and a bungalow are being erected.

The Good Luck, on section 22, 19-15, has its first well on the pump and it is doing 150 barrels. Work has been begun on the rig of No. 2 and it will be spudded in before the end of the month.

On the P. M. D. & O., the two new eighty horsepower boilers, have been installed. Well No. 6 is in the sand about 1900 feet and will be on the pump in a few days. Superintendent Godfrey has been directing his attention to increasing the production.

At 2265 feet, the Golden Crest went into a sand, after having passed through the deep blue.

SUNSET-MIDWAY-McKITTRICK.

The Paraffine well No. 2, one of the biggest wells in Midway, has been making an exceptional production for some time, flowing at the rate of 1,000 barrels per day. For a few days last spring the well made as high as 1,200 barrels a day. Well No. 5 penetrated the oil sand a few days ago.

The Mays Oil Company, of San Francisco, drilling on section 30, 21-23, is down over 1,500 feet with 12½-inch casing. This is much greater depth than is usually penetrated by so large a hole, and it will enable the company to finish up with a large hole. Two miles to the east the company is rigging up for another well.

The Midway Crude is down about 1,200 feet in well No. 2, having already passed through some bodies of heavy oil. It is the intention to drill to the deeper measures, however, which are expected to be found within 400 or 500 feet. It is hoped that the same sand found in the Crandall well, half a mile north, will be encountered at a depth of 1,600 or 1,700 feet.

A new air-compressor is being installed on the Loma Vista property. The entire plant will consist of three seventy horsepower boilers, one of which is already in operation.

The Sunset Monarch Company is apparently doing good work, as it has just brought in an old well that has all along

had good showings. At a depth of 1470 feet a new sand was found, the oil being of 19 gravity and the well good for close to 200 barrels a day. It is located on section 26, 12-24.

The Standard has its hole on 28, 32-23 down 2,500 feet, and a string of eight-inch casing has been put in. The company is using a rotary rig and is making good headway. A tar sand was encountered at about 800 feet, but nothing of importance has as yet been found below that point.

The necessity for office rooms at Maricopa has led the Torpey-Jones people to convert the second floor of the bank building into offices, which will soon be ready for occupancy. Mr. Torpey has spent considerable time lately in an effort to organize a bank and this will probably be opened in a short time.

A new well was brought in the first of the month on the W. T. M. lease, formerly the Altoona property, at Midway.

The Muscatine is to drill two more wells. No one is said to be producing at the rate of about 80 barrels a day.

Developments at the Honolulu gasser indicate that the flow of gas will be permanent, as it is believed a large supply is stored underneath a heavy rock capping. The well will undoubtedly prove to be more profitable than if it were an oil well, as there is a big demand for natural gas in all localities where gas of any kind is used. This and one other are the only substantial gas wells that have as yet been discovered in the State.

The Tight Wad well has settled down to a regular 200-barrel producer. I started in around 500 barrels.

It is reported that ten new rigs will be installed on the lease, Southern Pacific, adjoining the Monte Cristo, and work started as quickly as possible. This means much to the district, although it is only in line with plans of practically every company in Midway and Sunset.

The Northern is selling about 10,000 barrels of water daily at three cents per barrel. There will be a demand for all the water that can be produced and, as a matter of fact, it will he a welcome development, as water is a scarce article and the lack of it has caused great inconvenience in the past. Three or four such wells would be welcomed.

Finished at less than 500 feet in depth the Alpine No. 4 well is reported to be good for approximately 100 barrels per day. This is close to the Amazon.

The offer of the Standard to pay 40 cents per barrel to producers is not bringing out any oil to amount to anything. On the other hand, it is believed that most of the producers who have not already joined the independent agencies will do so at once, thereby cutting the Standard off for ten years time from all possibility of securing oil through purchase. The offer of this price, when others are paying more money, is regarded as a puerile and cbildish act on the part of the Standard.

On the southwest quarter of section 34, 28-20, about ten miles northwest of the main McKittrick field, Fred Kimble is reported to have entered a prolific sand at a depth of 2,100 feet. The indications are such as to expect a well of good producing capacity. Other wells in the same relative vicinity, especially those on the Templor Ranch, have proved good producers at shallow deptb and this new development will mean much to the Templor field. With the advent of the new pipe line, developments in this section will be stimulated, as tbe territory has all indications of becoming a heavy producing section.

Miller & Lux have given a lease on the southeast quarter of section 13, 31-21 to Barnsdale, Yancey and Drake, a tract of forty acres, the largest acreage that can be secured from the lessors. Drilling will be started immediately. This is located southeast of McKittrick.

The Traction Oil Company, under the management of C. F. Whittier, of Los Angeles, is drilling in the same vicinity, where there is every indication that the territory will be productive. Mr. Whittier has the utmost faith in the future of the development.

DEVIL'S DEN.

Considerable activity is noted in this section within the past few weeks and interest has been stimulated by the reported strike of oil by the Devil's Den Consolidated Company, which has penetrated the sand at a depth of a little over 1,400 feet. The drill went into about three feet of the sand, when the pressure sent the oil to the surface. Work was immediately stopped and no one allowed to approach the derrick except employes. It looks as if this was a sure thing strike, although only further drilling will determine the value of the proposition. The sand shows very thin at the surface, but is likely to widen out with deptb and distance from the outcroppings.

Operating on section 13, 25-18 is the Perkins proposition, the drill having been sent down about 600 feet at this time. No oil is expected short of about 1,500 feet. Indications are extremely favorable.

FINE SHOWING IN LONOAK DISTRICT—OIL RUNS FROM 12 TO 42 GRAVITY.

There is considerable activity in the Lonoak oil district, due to recent strikes made by the Lonoak, and Salinas oil companies. The territory being developed is about twenty miles easterly from King City, and is a belt lying along the westerly side of a fault running northwest and southeast, crossing the San Lorenzo Creek at the Lonoak oil field.

This fault can be traced northwesterly into San Benito County along the easterly slopes of Bitterwater, Bear Valley, and Rabbit Valley, and southeasterly through Monterey County along the easterly slopes of Peach Tree Valley, Slacks Canyon and Cholame.

Lonoak No. 2, located in the S. E. ¼ of Sec. 31, T. 18 S. R. 10 E., M. D. M., after passing through several oil bearing strata, and heavy seepages, encountered a rich body of oil sand with a good flow of oil, at a depth of 1830 feet. Tbey suspended operations, cemented off the water, and expect to resume work September 1st.

Salinas No. 1, located in the S. E. ¼ of Sec. 9, T. 19 S., R. 10 E. is down 550 feet in oil bearing shale. Numerous seepages have been encountered, and the flow from them increases with the depth of hole. Tbe present flow is about 20 barrels per day. The intention is to continue sinking until the same oil sand tapped by Lonoak No. 2 is reached.

The oil in both Lonoak No. 2 and Salinas No. 1 is about 12 degrees gravity. The oil found in the prospect boles of the Alvarez Oil Co. is 42 degrees gravity. The latter company is located in Sec. 32, T. 18 S., R. 10 E., and is down 150 feet.

The Lone Pine Oil Co. is getting equipment on tbe ground in the N. W. ¼ of Sec. 25, T. 18 S., R. 9 E. and expects to spud in September 15th.

Matthews and McCray are getting their outfit on the ground, expecting to begin operations immediately.

The Standard Oil Co. is preparing to drill on the Topo Rancho, also in the N. E. ¼ of Sec. 21, T. 19 S., R. 10 E.

The Union Oil Co. is preparing to drill on tbe N. W. ¼ of Sec. 22 T. 19 S., R. 10 E.

SANTA MARIA.

The formation now being encountered by the Ideal Oil Company corresponds so far as can be learned to those found in the Union and Palmer wells. Tbis correspondence in formation has been continuous from the surface and as these shales on other properties mentioned extend in an unbroken body into the oil formations, it seems improbable that any marked difference will be found in the Ideal well. This should mean finisbing the well at around 3000 feet with more or less oil bearing strata in the last 1200 feet to 1500 feet and a very thick productive sand at the bottom.

The Ideal company's well has encountered an oil stratum at 1440 feet, with a strong showing of oil and gas coming to the surface.

Well No. 6 of the New Pennsylvania is in oil sand at the depth of 3300 feet and looks better than any other well in this end of the field. No. 6 will probably be put on the pump in about ten days, and, of course, this will prove just how good it is, but the management feel that in No. 6 they have a fine well. The well on the Fugler tract is down 1500 feet and going along smooth and good.

The New Pennsylvania Company has been offered an even $100,000 for its property in the Cat Canyon district, east of the Palmer well. The company has a well in progress on this property and although the oil sand has not been reached it seems a certainty that every acre will be proven to be oil bearing.

SAN LUIS OBISPO.

Robert Wickenden has subleased 400 acres of the J. Musico tract in the eastern Santa Maria oil fields to the Abcy Oil Company of San Francisco.

The Abcy Oil Company has recently organized and has incorporated with the object of further exploiting the Santa Maria oil fields, and will commence operations as soon as the rig arrives on the ground.

Some time ago Mr. Wickenden leased 800 acres of the J. Musico tract and the prospects for oil are said to be very promising.

Mr. Wickenden is prominent in oil circles. He was the organizer of the Foxen Oil Company, which has a good showing today. The Foxen has succeeded in shutting off the water and there is a strong flow of gas with some oil, and the prospects are very good.

There not only is more activity in the Edna oil field, but the prospects of developing a good paying field are brighter every day. F. J. Burns, the well-known oil man from Santa Maria, speaking to a Daily Telegram reporter, stated that the prospects at the North Star and the Mutual wells are most encouraging. If these two wells prove to be good producers, there will be considerable development started in that vicinity. The construction of the two refineries at Edna augurs well for the development of that section of the county.

KERN RIVER.

The Kern River Drillers, operating the north-west quarter of the northeast quarter of section 36-28-27, has gone into the oil sand at 1100 feet. This is the most westerly lease in the Kern River field and is the latest proof that the limits of the field in that direction are still undetermined.

The Stauffer Oil Company, on the northeast quarter of section 28, are in the sand with their No. 2 well. Notwithstanding that this is shallow territory, there is considerable gas pressure, and there was quite a blowout when the drill went into the oil sand. Superintendent Larkins is confident that he will have a well even better than his No. 1, which is good for forty barrels a day.

The Overland, operating the old Only lease, is getting ready to pump the Petroleum Center Wells on the adjoining lease, which has also recently been acquired. A new water well is about completed on the property.

The run tags of the Tejon on section 36-28-27 show a monthly production of close to 6000 barrels. This is from five new wells in territory once practically abandoned. The latest well drilled which is farthest west of any on the lease is the best producer.

VENTURA.

The Ventura Oil Development Company began road work on its 640 acre tract of land near Piru the 9th and is progressing nicely. The company expects to spud in about September 1st. This is considered one of the surest properties in the field.

The Harris Oil Company has a bad fishing job in one of its newly began wells and several weeks of work has failed to recover the lost bit. A crooked hole in another well has held up progress for some time.

The Ventura Coast Oil Company has penetrated the second sand at about 450 feet and shows up nicely for a shallow well.

The Modelo Oil Company shipped two cars of oil on the 10th. This company produces oil as high as 33 degrees Bi with a general average of about 28 degrees Bi.

The Airndell well near the Airndell ranch has shut down indefinitely. The well was probably over the formation and the rig too light for deep drilling.

The Liberty Oil Company on Sulphur Mountain will begin work on its lease of 120 acres some time this month by cleaning out Well No. 1 and putting the same on the pump. No. 2 will spud in within sixty days.

FAIRBANKS-MORSE TO EQUIP THE UNION LINE.

Fairbanks, Morse & Co. has been awarded the contract for the entire pumping equipment of the new Sunset-Midway Coalinga pipe line of the Producers Transportation Co. Some idea of the size of the order may be gathered from the fact that no less than 62 cars will be necessary to transport it and that no less than 100 pumps of all sizes are included in the shipment. The material will weigh in excess of 2,000,000 pounds and will cost several hundred thousand dollars. The shipment, which will come direct from Beloit, Wis., according to specifications supplied by the Los Angeles office, will include ten 22-42-8-36 pumps, weighing 102,800 pounds each; nine 15-26-6-18; fifteen 10-10-12; thirty 7½-4½-10; fifteen 5¼-3½-5 fifteen 4½-3-4.

BIG BUSINESS IN OIL TO THE NORTH.

Nine steamers with an aggregate capacity of 270,000 barrels are operated in and out of Portland by the Union, Standard and Associated to supply the oil fuel trade of the city, the Oregon oil-burning railroads and the steamers on the Willamette River. The Associated has just added to its fleet the Catania, of 22,000 barrels capacity, in consequence of its recent re-capture of the Oregon Railway and Navigation contract. The Portland and Rosecrans also make constant trips from San Francisco and Monterey.

The Standard runs the Asuncion, Maverick and Atlas with a number of barges occasionally. The Union operates the Argyll, Santa Maria and Santa Rita.

The value of oil cargoes is estimated at $15,000,000 a year—more valuable than the lumber trade and equal to the flour and grain exports from any Pacific port.

GOOD PROGRESS ON PIPE LINE.

L. P. St. Clair, president of the Independent Oil Producers' Agency, announces that the Independents' big pipe line is building very nicely. The big 55,000 barrel tanks at Coalinga have been installed, the ten-inch pipe connections to these tanks have been completed and the pipe line builders have now begun laying the eight-inch mains southward toward Kern county.

Within sixty days work laying the main line from McKittrick and other Kern county points will be established. From the ocean shore end of the line pipe will soon be laid, and it is hoped to have the big oil feeder ready for service by February 1st, 1910.

It has been figured out that the Southern Pacific railroad saves enough between the cost of oil and that of coal for fuel to pay its dividend. What will Harriman do to pay dividends when the cost of oil reaches a parity with coal? And so oil is again the salvation of a big railroad.

CONSOLIDATION OF REFINERY, OIL PROPERTY AND TRANSPORT COMPANY.

It is reported upon good authority that the California Refineries Company, Limited, the Graciosa Oil Company and the California Oil Transport Company have perfected a consolidation of all interests. A new company is to be organized to take over the properties of all three corporations.

The refinery has been idle evr since it was erected and the wells of the Graciosa company have been in bad shape, although it is believed they can be restored and new ones drilled so as to furnish a portion of the oil necessary to run the refinery to a part of its capacity. The refinery is undoubtedly capable of turning out a good product, as tests made prove this, but the lack of oil has prevented its being operated.

It is to be hoped that the new deal will place the business of the different propositions upon a sound basis, although misfortune has been the attending genius ever since the refinery was started. There are different opinions as to the cause of this condition. It is believed that considerable money will have to be spent yet to place it upon a commercially profitable and competitive basis.

Misleading statements have been made concerning the proposition; such as, for instance, that the company was paying dividends; that the refinery was in constant operation and other things that have not had a tendency to create public confidence.

STANDARD RUNS FOR JULY.

Runs of the Standard Oil Company for the month of July were as follows:

Field.	Barrels.
Kern River	114,003
Coalinga	532,425
Santa Maria	194,451
Newhall	5,507
Midway	187,748
Total	1,034,134

The company's runs throughout California for the month of June were:

Field.	Barrels.
Kern River	125,030
Coalinga	523,712
Newhall	5,977
Santa Maria	204,016
Midway	157,255
Total	1,015,990

There is noted a total gain of about 18,000 barrels. Kern river is off 9000 and Coalinga has gained approximately an equal amount. Santa Maria has lost nearly 10,000. Newhall is slightly less, while Midway has gained about 30,000 barrels.

OREGON-MIDWAY IS ATTACHED.

E. D. Burge, by his attorney, W. B. Beaizley, has sworn out an attachment on the real and personal property of the Oregon-Midway Oil Company, of which he was superintendent for a number of years. The attachment is for about $6000 and was served by Sheriff Kelly, who went to the Midway property with Mr. Burge.

The latter says this amount is due him for back salary, money advanced and for stock and cattle and things which he sold to the Oregon-Midway at the time he was succeeded by L. B. McMurtry. The attachment covers the real property, which is the northwest quarter of section 8 and the south half of section 5, 32-23, rich oil land in the Midway district, most of it being patented. Burge claims the Oregon-Midway sent an expert here to go over the books, which were found O.K., and Mr. Burge was promised a settlement last April by the president, Chas. S. Ladd of Portland, Oregon. The Oregon-Midway has one producing well and is drilling another. In its development work is not hampered by the attachment.

PRODUCERS SUBSCRIBE FOR BONDS.

The call of the Union Oil Company to members of the Independent Agencies to invest in bonds of the Producers' Transportation Company, has met with a subscription of $161,000 at latest reports, which sum will increase to $200,000.

When the bonds were first placed on the market they were over-subscribed three times by Union Oil stockholders, but the names of no producers appeared, and a second attempt to interest them resulted as above stated. The second call was to members of the agencies only and they were invited to subscribe as liberally as they desired, the aggregate amount taken by them to be delivered in preference to all other allotments.

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PROMINENT NEVADA MINING MEN SECURE PRODUCING OIL PROPERTY AT VENTURA.

J. B. Cottle and G. S. Johnson, of the Goldfield Brokerage Company, who have been operating exclusively in Nevada during the past five years, are embarking in the oil industry in California, after an investigation covering several months as to the present outlook and future possibilities of the business.

Mr. Johnson, who has been in the oil fields most of the time since the first of this year, speaking of their activities in the oil line, says: "For the past two years we have been watching the remarkable growth of the oil industry in California. Early this year we determined to personally investigate the oil business, with a view to branching out to the development of oil properties if the industry seemed attractive. Since the first of the year I have spent the majority of the time in California gathering all available information relative to the outlook for the oil industry in the State and its future possi bilities. To say that I was surprised at its magnitude is putting it mildly. Taking the figures of the U. S. Geological Survey as a basis for calculation, the oil deposits of California will pay to the producers several billions of dollars during the coming fifty years. Everyone who is investing in California oil is making mighty big money. Never before have I seen anywhere in the world such remarkable investment opportunities. When the investing public is in possession of the actual facts in connection with the money-making possibilities of California oil investments, there will be the greatest boom in oil that the country has ever known."

Mr. Cottle and Mr. Johnson are organizing the Pyramid Oil Company, for which they have already acquired seventy acres of proven, producing oil property in Ventura County. The property now has a production of about 1000 barrels of oil per month, and with the drilling of four new wells the management is confident that this production can be brought up to from 10,000 to 15,000 barrels per month. Drilling operations on the first new well will commence about September 1st.

OIL OUTLOOK IN CARMEL VALLEY.

Oil experts that have traveled the Carmel Valley in Monterey county the past two weeks announce that rich oil deposits lie beneath the earth's crust, and that with a limited expense, fortunes await the owners of the property in the valley.

During the past month many agents have called on property owners, in the hopes of securing a contract, by which the property owners will receive a one-eighth royalty of the net proceeds of all oils taken from their section of the field. It is probable that the offer will be accepted by some, as the owners are put to no expense in development.

The indications in the opinion of the oil experts are that the find is as good, if not better than some of the old fields and considerable stronger than the prospects at Santa Maria and those above King City.

The oil field is six miles from Monterey, an oil shipping point, which offers an alluring investment to oil men as the cost of a pipe line to this point would be small.

NAVY PLANS OIL RESERVOIRS.

Tentative plans have been prepared by the Bureau of Navigation for the establishment of fuel oil depots. These plans will be sent to the general board of the navy for review and approval, or perchance for revision.

It is the purpose, in a general way, to have liquid fuel stored wherever there is now a coaling station. This would result in establishing such liquid fuel depots at Puget Sound, San Francisco and San Diego on the Pacific coast, and also at Honolulu, Guam and probably at Cavite or Manila.

Eventually there will be oil ships, just as there are now colliers. In fact, the plans have been prepared for converting two coal barges into oil barges. It is intended to ask congress for funds to build ships to carry liquid fuel. These ships, of course, would obtain their supply from the shore stations, to be established. While these plans are all tentative and subject to changes by the general board, the general policy of having oil stations and ships will doubtless be adhered to. This policy is but a necessary result of using oil for fuel.

The plans for improvements to be coaling stations are also subject to the approval of the general board. At California City the work to be done this year consists largely of making open storage with cement flooring and a few bunkers. There will also be a great crane about 200 feet long for the quick and economical handling of coal. By making its capacity 90,000 to 100,000 tons the navy department will have at California City a plant bigger than that on Puget Sound, which has a capacity of 75,000 tons. The quantity of oil to be stored at California City has not yet been decided on.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for California Derrick by J. M. Nesbit, patent attorney, Park building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Sectional derrick, Walter E. Carmony, Belvidere, Ill., 926, 925.

Samson-post, Thos. J. Oney, Lawrenceville, Ill, 926, 959.

Pump for deep wells, Ferdinand W. Krogh, San Francisco, Cal., 927, 057.

Deep-well pump, Edwin A. Hardison, Kern, and Robert W. Gunn and Willsie A. S. Thompson, Los Angeles, Cal., 926, 236.

Installing wells, Herman Frasch, New York, 928, 036.

Deep-well pump, Byron Dewoody, Franklin, Pa., 928, 639.

Coupling for oil-well power-transmitting mechanism, Louis E. Shiray, and Earl J. W. DeForest, Robinson, Ill., 928, 805.

Flexible connection for pumping mechanisms, William A. Paine, Orcatt, Cal., 929, 164.

Apparatus for recovering kerosene oil from water-bath, Victor Fornonzini, New Britain, Conn., 929, 204.

Journal-box for oil-pumping powers, Harley E. Braymer, Independence, Kans., 929, 544.

Explosive engine, Arthur F. Clark, Butler, Pa., 929, 554.

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are found today in California Oil. The production during 1909 will net the producers about $45,000,000. The dividends being paid by California Oil Companies are enormous. More money will be made out of California Oil investments during the coming generation or two than have been made out all of the gold mines discovered since time began. NOW is the time to invest in California Oil stocks if you wish to make tremendous profits during the coming year.

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NEW INCORPORATIONS.

Celia Oil Company, of Oakland, capital stock $20,000, by A. L. Leal, F. D. Burr and A. J. Moore.

Princess Oil Company, San Francisco, capital stock $1,000,000, shares $1 each, subscribed $9, by J. A. Boyd, D. Driscoll, T. A. Duffy, R. P. Kavanaugh, Philip Lawler, A. J. Rankin, C. L. Smith, E. B. Thomas and J. E. White.

Pathfinder Oil Company, Los Angeles, capital stock $1,000,000, by Julius Fried, A. Hodgkinson, G. W. Henderson, H. C. Shippee, R. C. Cabe.

Ecuadorian Petroleum Company, Los Angeles, capital stock $50,000, by H. A. Wilson, W. A. Barker, F. A. Barnes, J. W. Beam and W. R. Buckner.

Bella Vista Oil Company, Redding, Cal., capital stock $200,000, by C. L. Cofer of Red Bluff, president; J. R. Peterson and J. W. Riley.

Aztec Oil Company, capital stock $250,000, by G. Sheridan, W. A. Sloan, R. T. Fisher, H. T. Earl and W. E. Buck, all of San Francisco.

Lone Pine Oil Company, Salinas, Cal., capital stock $200,000, by J. H. Menke, F. W. Schroeder, G. A. Daugherty, Harry Winham, John Berges.

La Sopresa Oil Company, with Fresno as its principal place of business, capital stock $500,000. The directors are A. M. Field, J. L. Butin, Charles Detoy, A. J. Vance, L. J. Abrams, H. Ford and Martin Yribarren.

The Vallecitos Oil Company. Fresno is also to be its principal place of business. Its directors are practically the same as those of the La Sopresa company.

Bonita Oil Company, San Francisco, capital stock 1,000,000 shares. J. Washley, president; Charles W. Gregg, vice-president; Irwin R. Broughton, secretary. Property at Petaluma.

Liberty Oil Company, capitalization 500,000 shares. Incorporators Ensign C. Cowell, Wm. G. Loomis, T. C. West. Office, 711 Phelan building, San Francisco. Property, 125 acres, Ventura county.

LATEST QUOTATIONS.

Los Angeles Stock Exchange.

Amalgamated Oil	$ 77 50	$ 85 00
American Crude Oil Co.	85	....
American Petroleum Co. (pfd.)	....	75 00
American Petroleum Co. (com.)	....	60 00
Associated Oil	35 12½	35 37½
Billiken Oil Co.	15	....
Brookshire Oil	1 50	....
Central	87	1 00
Columbia	1 27⅛	1 34
Continental Oil	32	38
Euclid Oil Co.	50	60
Fullerton Oil	1 70	2 25
Mexican Petroleum	1 30¼	....
New Pennsylvania Petroleum Co.	30	....
Olindo Land Co. (Oil)	32¼	35
Palmer Oil Co.	1 35	....
Provident Midway Oil Co.	24½	27½
Reed Crude	25	....
Rice Ranch Oil Co.	....	1 19½
Trader's Oil Co.	98 50	....
Union	105 62½	106 00
Union Provident Co.	103 50	....
Western Union	....	95 00

Last year 75,000 automobiles were made in this country and this year the number will reach 200,000, practically every one of them using gasoline for power. This means a demand for millions of gallons of gasoline more than is used at this time. In view of the limited production of that product it is likely that some method will be found to use either kerosene or a petroleum product more nearly approaching the crude state, thereby lessening the cost without decreasing the efficiency.

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Caribou	13.50	16.00
Chicago Crude	.08	
Claremont		2.30
Esperanza		1.50
Four	.30	
Fulton		2.00
Graciosa		.42
Gypsy		.26
Illinois Crude	.23	.25
Junction		.55
Kern River		11.00
Linda Vista		.50
Lucile	10.00	
Mecca	1.15	
McKittrick	.10	
Monte Cristo	2.00	2.92
Nevada County	.24	.25
Paraffine		.90
Palmer		1.35
Peerless		6.75
Piedmont	.20	
Pinal		10.00
Producers'		2.35
Record	5.00	
Rico	2.75	3.50
S. F. & McKittrick	21.00	
Sauer Dough	2.10	
Shawmut		.50
Sovereign	.21	.22
S. W. & B.		.50
Sterling	2.95	3.50
Turner	.75	.90
Wabash		1.30
W. K. Oil Co.	2.30	2.35
Sesnon	5.00	

Thus far this month dividends to the extent of $381,461 have been declared by companies listed on the San Francisco Exchange. A total of approximately $500,000 may be expected for the month of August.

	Rate	Amount
	Rate	Amount
Amalgamated	$1.00	$50,000
Brookshire	.02	10,000
Caribou	.25	20,175
Claremont	.02	9,000
Coalinga Pacific	.10	6,500
Esperanza	.01	2,400
Euclid	.01	3,500
Four	.01	3,000
Illinois Crude	.01	2,000
Homestake	.01	1,000
Home	.02	2,000
Monte Cristo	.03	15,000
Palmer	.02	36,040
Peerless	.06	6,000
Piedmont	.01	3,890
Pinal	.15	22,500
Record	.05	5,000
Rice Ranch	.01	3,000
Royalty	.03	600
S. W. & B.	.01	3,770
S. F. & McKittrick	.30	15,000
Union	.50	117,711
United Petroleum	.50	40,375
Wabash	.01	3,000
Total		$381,461

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Oil exceeded gold in value last year by nearly $10,000,000. This year it will exceed gold by more than $12,000,000. The industry is just in its infancy, although it is 24 times greater than it was ten years ago.

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We advised Templar Ranch when it was ten cents. It is now 30 cents. We advised San Francisco and McKittrick when it was $13.00 per share. It is now $25.00. We advised the purchase of Monte Cristo when it was 95 cents. It is now $2.85. Then there was Lady Washington at 10 cents. It is now 50 cents.

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Vol. 2 San Francisco, Cal., September 1909 No. 5

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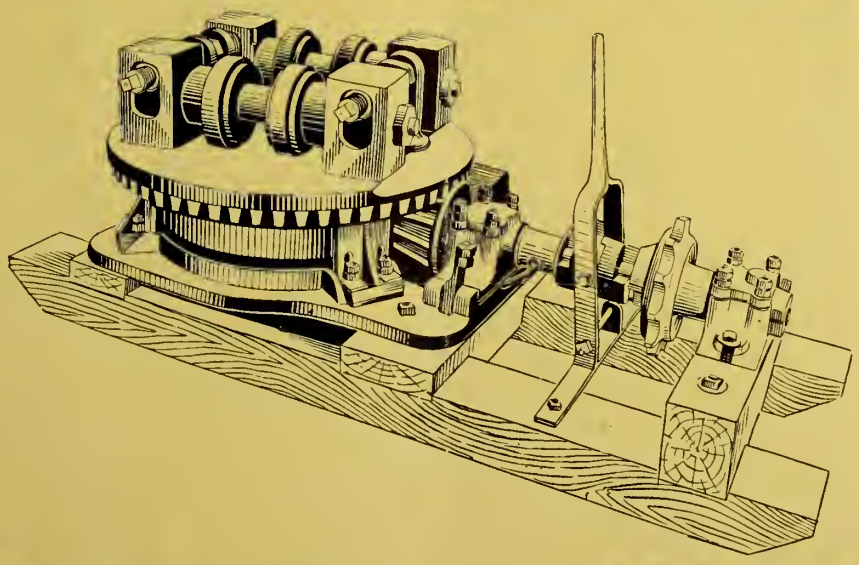

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Vol. 2 San Francisco, Cal., September, 1909 No. 5

AGGRESSIVE SPIRIT IN KERN RIVER

The aggressive spirit prevails in the Kern River field, and operations are very extensive in all portions not already drilled. This is especially true of the northern portion of the field, where a large number of wells are being drilled.

The Peerless Oil Company, whose affairs are presided over ably by Jno. M. Wright of San Francisco, is starting a campaign of improvement and development that will largely increase the production at a cost of between $35,000 and $40,000. The company is installing new equipment, including a large air compressor for use on eight wells. The production now averaging about 2,500 barrels daily will, by the use of compressors be brought up to something like 3,500 barrels within the next four or five months. It is expected that the machinery will be on the ground ready for installation witbin thirty days. Tbere are 53 producing wells on the property and room for from 15 to 20 more, which will be drilled within the next year or two. The company is paying six cents per share montbly dividends and its affairs are in good shape. The developments of tbe near future will place the company in position to make a handsome increase in its dividend rate. As it now stands the company ranks sixth in the listed companies as a dividend payer, having paid $801,000 to its stockholders, or over $8 per share.

The sale of the northwest quarter of section 28-28-28, the property of the Kern Oil Company in Kern River, which was announced a month ago in the Derrick, has been finally consumated. The purchasers are W. A. France, already largely interested in the Cleveland Oil Company and other Kern county properties; M. J. Monnette, prominently known as one of tbe partners in the famous Hayes-Monnette lease on the Mohawk at Goldfield, and C. A. Canfield of Los Angeles.

The land in question is the last asset of tbe Kern Oil Company. The wells will be shallow, although good producers, the entire 160 acres being sure territory.

The price is $145,000, of which $28,933.33 has already been paid. The balance will be distributed over a period of two years. A dividend of 20 cents per share has been declared to the Kern stockholders, and the further sums to be paid will probably bring the dividend to be eventually derived up to $1.25 and over. The stock sold recently on the oil board in San Francisco at 80 cents, to which point it had advanced within a year from 10 cents.

The J. E. Gray company, in the southeast corner of tbe Kern River field, where it was known there was oil, but where it was supposed to exist in small quantities only, is deepening No. 1 and an additional 128 feet of oil sand has been found, with tbe work not yet finished. In this well oil was first struck at 140 feet, and it was finished originally at 222 feet.

The Thirty-Three Oil Company has declared a 30-cent dividend. This is the first dividend since April, 1907, although nearly a million barrels of oil have been produced in that time.

Stockholders have been impatient, and J. J. Mack, one of tbe principal stockholders, recently made an offer of $2 per share for the stock. It is doubtful if he succeeded in buying any at that price, as those who had any information was confident that considerable money was in tbe treasury.

The Thirty-Three owns 160 acres in section 33-28-28 in Kern River field, and is incorporated for $100,000. Up to tbe time that it ceased paying dividends it had paid out $640,000 to its stockholders.

ALASKAN OIL RESOURCES.

C. G. Martin bas prepared for the Conservation Commission's report a chapter on the petroleum resources of Alaska, an abstract of which is given as follows:

"Petroleum may exist in the rocks at many places in Alaska, but at only four localities are the known indications sufficient to justify drilling. Wells have been drilled at three of these localities, but petroleum has been obtained in quantity at only one of them. In all of these the petroleum is of a high grade variety, suitable for refining, like that from Pennsylvania. Tbese four wells will be briefly described.

"The Katalla field is situated near the mouth of the Capper river, in latitude 60 degrees north, longitude 144 degrees west, or about 1,250 miles northwest of Seattle and 400 miles northwest of Sitka. The rock in this field consists of Tertiary shale, sandstone and conglomerate. The structure is complex, the rocks being steeply and intricately folded and cut by faults. These conditions would raise doubt concerning tbe existence of bodies of oil if it were not for the abundant seepages and the presence of oil in the wells. As it is, they increase the cost and other difficulties of drilling and make it entirely impossible to estimate the area of tbe probable oil producing territory.

"Sixteen wells have been drilled in the Katalla field. The result has been a moderate production of oil from one well and the demonstration of smaller quantities in three others. As only a small part of the area in which the presence of seepages suggest an oil field, has been drilled, the proof of the existence of any considerable volume of oil is yet to be made.

"The Cook Inlet oil fields are about 320 miles west of Controller Bay on the middle part of the west shore of Cook Inlet. Seepages are here numerous and prolific, but though several wells have been drilled, none as yet proved successful. The field is an area of Jurassic rocks which are chiefly shales and sandstones. The folding is much more moderate than at Controller Bay, but many faults are present. The relation of the occurrence of oil to the geologic conditions has not been discovered, and hence the areas of possible oil-producing territory are entirely problematical.

"At Cold Bay, on the Alaska Peninsula, 160 miles southwest of the Cook Inlet fields, there are many large seepages, and several wells have been drilled, none of which has produced more than traces of oil. Here, as in the Cook Inlet field, the rocks are chiefly Jurassic shales and sandstones. The structural conditions are not unlike those on Cook Inlet.

"Near Cape Yakataga, 75 miles east of Controller Bay, many large seepages are reported, but owing to the unaccessibility of the region no drilling has been attempted. These seepages are located on Miocene shale and sandstone, which are steeply folded.

"Summarizing, it may be said that the occurrence of oil is suggested under considerable areas in Alaska, but the presence of profitable oil pools has yet to be shown. The low price of oil on the Pacific coast and the high cost of drilling in Alaska make any attempt to develop the possible Alaska fields at present an unattractive proposition.

"All considerations point to the desirability of conserving the Alaska fields until the decline of the California and Mid-Continent fields. When Alaska oil is utilized it should be for refining, and the burning of crude Alaska oil should be discouraged."

NEW INCORPORATIONS.

Portola Petroleum Company, Coalinga, Cal.; capital, $500,000; incorporators, C. E. Whitney, C. A. Murdock, F. C. Brothers, R. D. Gerrard and W. E. Tracy, all of Coalinga.

Colonia Oil Company, Oxnard, Cal.; capital, $200,000; incorporators, A. Levy, T. G. Gabbert, H. W. Whitman, W. L. Dunn and Frank Petit.

Bankers' Oil Company, Los Angeles; capital, $1,000,000; directors, C. A. Canfield, M. J. Monette, G. G. Gillette and Ora E. Monette, all of Los Angeles, and Dr. W. A. France, Columbus, O. Property, 160 acres Kern River.

The Empire Oil Company, San Francisco; capital, $200,000; incorporators, S. A. Guiberson, Jr., Coalinga; H. A. Whitney, P. J. Muller and L. O. Cannon of San Francisco, and E. A. Guibenet of Oakland.

Fullerton Extension Oil Company of Arizona; capital, $1,000,000; incorporators, J. W. Roberts and S. Thornton Langley of Los Angeles.

Gold Ridge Oil Company, Sebastopol, Cal.; capital, $1,000,000; incorporators, John F. Rhodes and G. A. Stimmetz, Banta, Cal.; A. J. Fowlie, Sebastopol; W. F. Cochrane, Turlock, and W. W. Hill, San Francisco.

King City Oil Company, King City, Cal.; capital, $200,000; incorporators, C. H. Widemann, Gonzales; William F. Beasley, F. E. Wideman and William D. Luckett, King City; Henry C. Tully, J. B. Tully and Lucile Tully, Bitterwater.

Bohemian Oil Company, of Hanford; capital stock, $500,000, shares $1 each, by L. S. Chittenden, A. F. Flory, E. W. Houston, W. J. Wilson and others.

Lander Oil Syndicate, of Los Angeles; capital stock, $1,000,000, by R. E. Plunkett, J. North, C. P. Wilcox, F. H. Hamilton, H. Merrill, M. M. Gilchrist and J. P. Wood.

Positive Oil Company, Bakersfield; capital stock, $200,000, by L. H. Byron, C. C. Friend, B. H. Hancock, G. Merz and G. L. Warnken.

Coalinga Crown Oil Co., capital stock, $250,000, by S. Mitchell, L. E. Carter, R. A. Van Loan, R. L. Berry, M. A. Lindsay, A. M. Drew, J. C. Pottle, A. M. Gilstrap and E. A. Perkins.

SANTA MARIA WILL BACK INDEPENDENTS.

Santa Maria will stand with Coalinga and Kern county against any attempt to reduce the present price of oil and in the further effort to increase the present price to a fair and equitable figure, an amount per barrel yielding the fullest return to the producer and at the same time conserving the supply and protecting the interests of the consuming public, says the Oil World.

The above prediction is based upon a series of personal interviews with operators in Santa Maria field. Not one of these but expressed the opinion that the Standard would fail in its attempt to gut the oil business, and the opinion, also, that Santa Maria would be standing firm for better times and more prosperity. Santa Marians realize that their destiny is in their own hands. They are the masters of their fate.

There is no possibility of an even remote doubt that the producers of this field at the termination of present contracts, within, generally speaking, one year from date, will be selling its oil through the agency of the Independents, or will be making the Standard pay a good and substantial price, both of which methods amount, virtually, to the same thing.

The Standard, to live, must have Santa Maria. This field is one of its main props. There will be no hesitation, henceforth, in compelling that great company to make proper compensation for the service it receives from this field. That

BIG PREPARATIONS IN LOUISIANA.

Reliable reports are to the effect that the Standard Oil Company of Louisana has placed an order for a large number of steel tank barges and several deep draft ocean-going tug boats, which will be used by the company in the distribution of its products when the big refinery in Baton Rouge, La., is placed in operation. Wharves are being designed and it is the purpose of the company to distribute its products to all points on the river and its tributaries as well as by sea. The oil is to be piped to the refinery over thousands of miles of pipe lines from all the oil fields of the lower section of this country and after being refined will be shipped by rail, river and sea to those points where the company has consumers. The loading of tank ships for foreign trade is also to be one of the features of this company's operations here, and the building of the wharves on the water front above Baton Rouge will be begun shortly so as to be ready by the time the plant is ready for operation early in the coming year. As the details of this shipping project have not been made public, its extent cannot be accurately estimated at this time, but it is understood that it will be the biggest oil shipping point which the company has anywhere in this country.

OVER 5,000,000 BARRELS IS AUGUST PRODUCTION.

The following is the best estimate obtainable to date for the California fields in August, a number of the fields being subject to later revision, but the total will not vary very widely from the above, the only big increase being in coast fields:

Districts	Production August
Coalinga	1,360,000
Kern River	1,150,000
McKittrick	500,000
Midway	185,000
Sunset	180,000
Watsonville and Sargents	7,500
Arroyo Grande	5,000
Santa Maria-Lompoc	750,000
Santa Paula-Newhall	39,000
Salt Lake	390,000
Los Angeles City	45,000
Whittier	68,000
Fullerton	375,000
Total	5,054,500

MALHUER COUNTY, OREGON

As early as 1901 oil claims were located in Malheur County, Oregon, and more or less prospecting done with small horse power drills, but not until the pioneer standard drilling rig of the Malheur Oil and Gas Development Co. of Union, Oregon, entered the field about two years ago did development work begin in earnest. It is reported that this company's well is now down about 1,700 feet and is in a lime formation which the members of the company take as a very encouraging indication. This company has met and surmounted many obstables, suffered many delays by reason of being so far from a base of supplies and other causes. These delays and misfortunes have been very annoying and very expensive, and the owners of the company are entitled to great credit for their persistence in the face of such discouragements, which, however, must be expected in boring for oil in an unproven field.

A Drilling Well in Malhuer County.

The next company to enter the field with a string of tools was the Columbia Oil and Gas Developing Co., of Spokane, Washington. This company commenced drilling about one year ago. They have had some very favorable indications in their well, but have encountered some very hard formation, and as a consequence are only down about 700 feet.

The Mammoth Oil & Gas Co., of Union, Oregon, commenced drilling on its well No. 1 on April 12th of this year. This company has a very heavy string of tools, capable of sinking to a depth of 4,500 feet if necessary. The company being located over four miles from a water supply, they first drilled for water, which was struck at 210 feet. The drill in the big well is down at the present time about 900 feet. At about 480 feet the drill cut into a gas stratum, which yielded quite a flow of gas with a strong odor. Oil in small quantities has been found at various depths, and the indications continue to be very favorable and very encouraging.

As this is being written the writer learns that the Eastern Oregon Oil & Gas Co., of St. Johns (near Portland), Oregon, has just received its standard rig at Nyssa, Oregon, on the line of the Oregon Short Line. The derrick and buildings for this rig, which is reported to be a duplicate of the Mammoth rig, have all been erected and are ready for its immediate installation.

The Baker & Malheur Oil Co., of Baker City, Oregon, is operating a rig on their property. In well No. 1 they have reached a depth of 385 feet, and in well No. 2 about 100 feet.

Many other companies have been organized, some of which are preparing to install rigs in the near future. The Ontario Co-Operative Oil Co., at Ontario, Oregon, which is from 15 to 25 miles from where the above companies are operating, has a well down about 3,700 feet. At a depth of 2,210 feet they encountered a gas pressure so strong that they had to abandon their standard rig and proceed with a rotary. At present it is reported that they are shut down and will soon start No. 2 out nearer the foothills.

There are four or five oil experts at Vale, the county seat of Malheur County, watching the development at the various wells, among these being Walter M. Dunham, of Coalinga, California, an acknowledged authority on oil production in the United States. In an interview published in the Vale Plain-dealer, under date of August 14th, Mr. Dunham said:

"This district in Malheur County is a good place to bring a man from Missouri, because he 'can be shown.' The largest exposed bodies of oil sands and shales are here, and this leads me to believe that when the drills reach a proper depth, oil of high gravity will be encountered, which will have a ready market at home, and will meet the demands of foreign consumption. From what I have seen of the oil fields of Malheur County, I look forward to this field producing oil of high grade, in large quantities, in the very near future."

The companies and private individuals interested in this field, upon a proper representation of the facts concerning the development work done, induced the Secretary of the Interior, in June, to withdraw from all forms of entry and purchase 75,200 acres of land located as oil claims under the placer mining laws of the United States pending legislation, and on June 16th Senator Bourne, of Oregon, introduced a bill in the Senate, which, if it becomes a law, will bridge the gap that heretofore existed between the mining and agricultural land laws of the United States.

At each of the wells now being drilled there is oil and gas in sufficient quantities to lead reasonably prudent men to expend both time and money in continuing their present work and in the further exploitation of this field. This fact is evidenced by the number of rigs in the field before anyone has discovered oil in commercial quantities.

UNITED STATES PETROLEUM PRODUCTION IN 1908.

Detailed Annual Report by Dr. Day Shows Further Gain in Country's Output Despite Unfavorable Conditions—Oklahoma First in Producing Column, but California Leads in Value of Product.

The great gain in production of petroleum in 1907 over 1906 required such a drain on all the great pools and developed so large a stock of unused crude oil that a further increase in 1908 was not probable as a matter of trade requirements or of available petroleum resources. As the year 1908 went on unprecendented floods in May and June, and again in November, brought disaster to the pipe lines of Oklahoma, and these storms also left a record of over 100 oil tanks destroyed by lightning. In the Eastern fields, on the other hand, the severe drought seriously interfered with well drilling. The decline in production in the Glenn pool and in various Texas and Louisiana pools increased the likelihood of a total smaller than in 1907. Nevertheless the actual record of the year shows a total beyond all records, 179,572,479 barrels, compared with 166,095,335 barrels in 1907, or 8.11 per cent increase. The total value was proportionately great, viz., $129,706,258, as against $120,106,749 in 1907. The price of the product in California increased and it remained steady in other fields, except in the Gulf field, where a comparatively groundless fear of overproduction from the new Markham and Goose Creek districts caused depression.

The increase came from the steady growth in Illinois and California. Neither field showed phenomenal development. California responded to the higher prices consistent with depleted stocks, and Illinois showed the continued effect of the great investments of 1907 in this new territory.

The year, however, had its sensations. They came in midsummer. On July 2 a large gusher was drilled in at Goose Creek, Harris county, Texas, and three days later a gusher of the Spindle Top type came in at Markham, in Matagorda county. This turned the attention of the oil producers in the Gulf field significantly farther South.

July 4, 1908, proved memorable in three widely separated regions. At Anse la Butte, La., a large gusher, known as "Lake No. 9," was drilled in. On the same day the Pearsons opened in Mexico a well that assumed the proportions of a volcano, and made a new world's record for an outburst of oil and water. On the same day also the Oil City well at Tustanowicz produced the record spouter for the Galicia field in Austria.

Oklahoma led all the States in production, with a total of 45,798,765 barrels, an increase of 5.23 per cent over 1907; California was a close second, with 44,854,737 barrels, an increase of 12.85 per cent over 1907; but Illinois made the greatest gain, rising from 24 281,973 barrels in 1907 to 33,685,106 barrels in 1908, a gain of 9,403,133 barrels, or 38.72 per cent. Colorado, Louisiana, Michigan, Missouri, Utah, Wyoming and West Virginia also showed gains in production. The declines were in Indiana, where it was nearly 36 per cent; Kansas, 25 per cent; Ohio, 11 per cent; Texas, 9 per cent; Pennsylvania, nearly 6 per cent; New York, 4.3 per cent, and Kentucky, 11 per cent.

The increased activity in the three great fields—California, Oklahoma and Illinois—was the dominant feature of the situation rather than the discovery and opening of any considerable new fields. The principal new field to gain prominence was the Caddo pool, in Northwestern Louisiana. The hoped-for increase in production from the Markham and Goose Creek fields in Texas did not materialize, and the total from the State showed a decline in spite of the increased production in the Humble pool. In the Appalachian field 7,115 new wells were drilled, of which 5,292 were producers, with a total initial production of 55,002 barrels. In the Lima-Indiana region 1,250 new wells were drilled, of which 1,088 were producers. In the new Illinois field 3,574 wells were drilled, of which 3,019 were producers, with an average initial production of 26 barrels a well. In the mid-continent field 3,490 wells were drilled, of which 2,587 were producers of oil, 471 were producers of gas and 432 were dry; the initial production of the producing wells averaged 83.7 barrels. In the Gulf field only 819 new wells were drilled, 606 being producers and showing an initial production of 297 barrels. In California 617 wells were drilled, of which 594 were productive, and in other parts of the country 44 wells were drilled, yielding 24 new productions. From the total of 13,210 productive wells drilled the average initial production was 42.9 barrels.

The average prices of petroleum for the entire country in 1908 remained identical with that in 1907, but there were considerable variations of an important character in individual States. The most notable of these was the increase in price in California from 37 cents a barrel in 1907 to 52¼ cents a barrel in 1908. The Gulf States, Louisiana and Texas showed a decline in value from a little over 80 cents to 60 cents. The Appalachian oil showed a slight increase in value, from $1.73 in 1907 to $1.76 in 1908.

On the whole prices were remarkably steady considering the notable increase over the large production of 1907.

Stocks.—The elasticity of the American oil trade is shown by the fact that stocks did not increase as much as might have been expected from the great production. The preparations of the year before led to better ability to transport the products to points of consumption.

During the year 1908 a study was made of the stock of petroleum in the known fields of the United States, and from this estimated total supply the probable duration of the oil fields was calculated from the present increasing rate of production. It was shown that in each nine years as much petroleum was produced as in all preceding years. The enormous production of the last two years is at a still greater rate than that required to keep up this ratio of increase; in fact, the production of the last eight years is almost equal to all the preceding product since the beginning of the industry. In all nearly two billion barrels have been produced in forty-nine years, worth one and three-fourths billion dollars. This is more than half the value of all our gold and more than the entire value of our silver produced in twice as many years. The value of the petroleum in 1908 exceeded the value of the gold and silver combined by over two million dollars.

Quantity.—It is a noteworthy fact that, as predicted in the last report, the rank of the oil-producing States as regards quantity produced in 1908 remained practically the same as in 1907. This has not happened before since the Western fields became a factor in the situation. While the rank of the States remained unchanged, the rate of increase in California was so much greater than in the ranking State—Oklahoma—that California came within less than a million barrels of first place, and the increased rate of production still continues in 1909. California's product in 1908 exceeded the product of Oklahoma in 1907. In percentage of increase Illinois exceeded the product of Oklahoma in 1907. In percentage of increase Illinois exceeded either of the other great producers.

Value.—Although second in quantity, California's total returns from the crude oil product exceeded those of any other State, and amounted to $23,433,502. This is the greatest total for any State, certainly in recent years. There was an average increase in price from 37 cents per barrel in 1907 to 52¼ cents in 1908. The increase will probably continue in 1909. With no change in price the total value of Illinois oil rose to $22,648,881, giving the State second place in this respect, while third in quantity, changing places with Oklahoma. Pennsylvania's total value fell from first place in 1907 to fifth place in 1908.

The railroads of the United States on which oil-burning engines were used in 1908 were the same as in 1907, with the addition of the Chicago, Rock Island and Pacific Railway,

operating in Kansas and Oklahoma. The consumption of fuel oil by all railroads of the country in 1908 aggregated 16,889,070 barrels, as compared with 18,855,691 barrels in 1907, a decrease of 1,966,621 barrels. The estimated mileage covered by oil-burning engines on these roads was 64,347,357 miles in 1908, an average of 3.81 miles per barrel of oil consumed. The total length of line operated by the use of fuel oil in 1908 was 15,474 miles, as against 13,593 miles in 1907. A small quantity of fuel oil was consumed by a few railroads for kindling locomotives and for shop purposes. Although much of the fuel oil consumed is crude oil, a considerable quantity is residium, which is a product of the refinery after the lighter products have been extracted.

The following are the names of the railroad companies which used fuel oil on their lines in 1908: The Sunset lines of California, Texas and Louisiana, the Houston and Texas Central Railroad Company and the Houston and Shreveport Railroad Company of Texas, the Kansas City Southern Railway Company of Texas and Louisiana, the International and Great Northern Railroad Company of Texas, the San Pedro, Los Angeles and Salt Lake Railroad Company, the Santa Fe lines, the Gulf and Interstate Railway Company of Texas, the Chicago, Rock Island and Pacific Railway Company of Kansas and Oklahoma, the Frisco lines of Kansas, Missouri, Oklahoma and Texas; the St. Louis, Brownsville and Mexico Railway Company of Texas, the Trinity and Brazos Valley of Texas.

The important features connected with the oil business in California in 1908 were increased production, consumption, prices and equipments; decreased stocks, and extension of fields.

The value of California's oil production in 1908 exceeded that of any other mineral, and the State was second in rank in quantity and first in value among the oil-producing States. The total production in 1908 was 44,854,737 barrels, or 12.85 per cent more than in 1907. Every district but one shared in this increase, the Kern River field leading in point of production. This condition was brought about by the increasing demand and consequent higher price for oil, which stimulated drilling, particularly in the Coalinga and Kern county districts. Much development work was carried on in Coalinga and the field was extended. In Kern county many new wells which had not been pumped for several years were cleaned out and operated.

The completion of the pipe line in 1907 and the building of the railroad to Midway, together with the construction of the new rifled pipe line of the Associated Oil Company from Kern River to tidewater in 1908, did very much to encourage drilling and to increase production. The year 1908 was one of greater activity in the Santa Maria field than ever before, but the output of this field, which in 1907 gave promise of being enormous in 1908, was considerably lowered by the presence of water. Much of this difficulty has been overcome by the application of compressed air. Some of the wells in the Santa Maria field have an extraordinary yield, and the field leads all others in the State in rate of production per well. More crude oil was shipped from the fields of Southern California in 1908 than ever before. The greater part of the oil exported from California comes from the Santa Maria field, its situation giving it command of the coast trade from Alaska to Chile and of foreign trade with Japan and Hawaii. There are shipped from this field about 25,000 barrels of oil per month for fuel on the Panama Canal, and before the expiration of 1909, shipments to the Isthmus may reach a total of 50,000 barrels per month.

No new oil fields of importance were discovered in California in 1908, although petroleum was discovered in several places, one being near Mono Lake in Mono county.

Production.

In the following table will be found the production and value of crude petroleum in California for the year 1908 by counties:

County and district.	1908. Barrels.	Value.
City of Los Angeles	637,328	$ 432,075
Salt Lake-Sherman	3,141,983	1,849,871
Whittier, Newhall, Puente	913,184	685,758
Total Los Angeles county	4,692,495	$2,967,704
Kern River	13,648,286	$6,770,018
Midway	410,393	177,753
McKittrick	2,517,951	1,196,686
Sunset	1,556,263	599,386
Total Kern county	18,132,893	$8,743,843
Santa Maria and Lompoc	7,758,579	$3,739,621
Summerland	58,103	34,835
Total Santa Barbara county	7,816,682	$3,774,456
Coalinga, Fresno county	10,386,168	$5,392,916
Fullerton, Brea Canyon, Orange Co.	3,358,714	2,298,104
Santa Paula, Ventura County	379,044	210,684
San Mateo, Santa Clara, San Louis Obispo counties	88,741	45,795
Grand total	44,854,737	$23,433,502

OIL IS GOING HIGHER.

"Is the price of oil going to go higher?" was the question asked Mr. W. L. Stewart, president of the Producers' Transportation Company, during that official's visit to this city several days ago, says the Coalinga Record.

"Yes. Oil will be worth more," he replied.

"How much more? What is the new price going to be?" were two more questions asked the oilman.

"Now," he said, laughingly, "you are dealing in figures."

Suffice to know that the officers of the Union-Independent Combine have no fear of the price of petroleum dropping, and likewise, that they have every confidence of getting more money for their product as soon as their transportation facilities are completed and ready for service.

Mr. Stewart came up from Los Angeles to spend several days in watching the progress being made in the construction of the pipe line at this end. While the pipe is being laid at a good rate and work on the pump station is going along, Mr. Stewart sees lots of work ahead of the contractors yet. The work will not be permitted to lag for one moment.

Mr. Stewart was asked in regard to the arrangements the Producers' company is making for the disposal of the oil it will have at its command at the expiration of the Independent's contract with the Associated in February.

"We are always on the watch for new business," he answered. "There is constantly increasing market for oil. The increasing business activity throughout the country means more demand for fuel. The railroads, too, need a greater supply."

Mr. Stewart said that the company was going ahead making such contracts as will care for the production to be handled. A portion of the Independent production will be cared for in this manner, while the remainder will be kept in reserve. Mr. Stewart said nothing of any large contracts that the company has completed or is contemplating.

The government, as yet, has made no overtures to the Union for oil, and Mr. Stewart does not think any efforts at making contracts will be made until Uncle Sam is certain of a sufficient supply to care for his requirements.

"When we have a sufficient supply we will be ready to talk oil to the government, providing, of course, that this fuel best fits its needs."

ELECTION OF OFFICERS.

The California Oil and Stock Exchange of San Francisco, at its election of officers last week, selected A. F. Coffin, president; G. S. Clark, vice-president; Wm. Hinkel, treasurer; Joseph L. King, chairman, and T. V. Doub, secretary.

CALIFORNIA DERRICK

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ONE BY ONE.

One by one the producers of oil in California are joining the agencies and by the time the pipe line of the Producers' Transportation Company is completed, practically every operator will be driven in self defense to the fold of mutual protection.

No one in California appears to be scared by the accumulating surplus, a condition altogether necessary if the markets are to be broadened. In mid-continent operators are all at sea over the large surplus stored at various points. As a matter of fact they appear to be somewhat discouraged over the prospects for the future. They have been fighting for immaterial objects, probably because they realize the helplessness from the shackles imposed upon them as judged by past experience. They have been fighting and spending money to get a tariff on oil; they have been fighting for laws to control foreign transportation, and marketing companies.

Why do they not follow the lead of California and let every body do business as they see fit; then go ahead to organize just as our own operators have done.

There is no Union Oil Company in Kansas or Oklahoma, but producers might organize one. They have the power to work their own salvation, but, perhaps like the elephant, they cannot realize it.

Perhaps they could get Union Oil Companies of California interested. An attempt would be worth while.

NO CHANCE FOR ARGUMENT.

The Oil City Derrick, of Oil City, Pa., in a nice manner, squelches the California Derrick in what might be called "the last word." We are obliged to acknowledge that heretofore there has been no chance for an argument when Standard Oil was in question. One might as well argue against the divine right of Kings to rule over the people and yet Kingdoms are slowly advancing to destruction and fall. The Oil City Derrick as in the past, speaks by the book for Standard Oil, and in the following comment practically notifies California operators that they will never be really free and independent until they bow the knee and become subservient to the hitherto unconquered institution known as Standard Oil. There are signs in the west, however, of the entrance into the domain of Standard Oil of a power greater than that Napoleonic institution and the forthcoming battle may possibly become a waterloo.

As we said before, "Time will tell." In the meantime we shall hope that the assumption of the Oil City Derrick that no argument can prevail against Standard Oil may be disproved.

The article in question follows:

> Our young namesake, the California Derrick, of San Francisco, takes exception to some of our comments on oleaginous matters in the Golden State. The discrepancies are not serious and the argument is unaltered. Oil stocks above ground exceed 100,000,000 barrels, despite the most strenuous efforts to find a market for it. California has only begun to store surplus, owing to the fortunate position of its producers in having a market at home for their product. Before going far into the controversial field we recommend to our bright cotemporary its own sage remark in another article: "But there may be a reason. Time will tell." Therein is wisdom. Time has disproved so many assumptions in the oil business, it has shown the falsity of so many hysterical assertions.
>
> We still maintain that Standard Oil can pay as much as anybody else for oil, and still do business.

CALIFORNIA ASPHALTUM.

There appears to be a growing demand at advancing prices for California asphaltum, and the production is increasing to a considerable extent to meet the demand. New refineries will be built and the capacities of old ones increased. The manufacture of asphaltum may yet become one of great importance to the oil industry of this state.

DISCOURAGING POLICIES.

It appears to be the policy of some oil papers to knock, perhaps without conscious intention. We refer particularly to California papers. We often note such items as this:

Jack Rabbit well is down 100 feet with no indications of oil, or "well No. 2 is down 2000 feet with no showing of oil as yet." This in spite of the fact that unless this or that well were a freak no oil could be expected until a certain depth had been reached.

One might as well say that "the derrick has been erected, but there is no showing of oil as yet"—give the operators a reasonable show to get oil where oil is to be found and cut out "there is no showing of oil as yet." It may be a true statement, but nevertheless unsteady.

COMPLETE HISTORY.

The Oil City Derrick, of Oil City, Pa., on the occasion of the fiftieth anniversary of Drake's first discovery of oil, issued an edition second to none ever published by any oil paper. It gave the history of oil from then until now, compiling it from its own records with contribution by some of the old-timers. We would suggest that it be printed in a bound volume thereby adding materially to the records of the oil industry of this country.

OIL INDUSTRY ISSUES HANDSOME BOOK.

The Oil Industry of Los Angeles, has just published a valuable work on California oil. It is the handiwork of Editor A. G. Nichols, and is as complete as it is possible to write the history of the state's biggest mineral industry. No oil man should be without a copy.

UP FOR GASOLINE; DOWN FOR CRUDE OIL.

C. B. Matthews of the Buffalo Refining Company, and one of the oldest oil men in the country, takes sharp issue with Edward D. Emerson of the Standard Oil Company in that city as to the causes for the recent advance in the price of gasoline. In an interview in the Courier, Mr. Emerson attributed the increase to the greater demand.

"That explanation," said Mr. Matthews yesterday, "will hardly satisfy the large number of consumers who now use gasoline for power purposes in automobiles, launches and gas engines when they know that crude oil, from which gasoline is made, has gone down materially in price. Under the natural and just laws of trade, consumers of a product are entitled to a lower price when the cost of raw material is less. There has been no sudden or extraordinary demand for gasoline to justify the advance in price from 10½ to 12 cents per gallon. The increase does, however, account for the increase in the value of Standard Oil securities in the stock market.

"I am familiar enough with the business to know that outside of the railroad rebates and special advantages in transportation, the Standard Oil Company is at the present time making more out of consumers than ever before in its history, taking into account the large volume of business. The price charged for gasoline is not a normal one brought about by competition or based on the cost of production, but is a Standard Oil rate fixed, as all Standard Oil rates are, by its own arbitrary power and always as high as its victim will stand.

"Standard Oil refines from 80 to 90 per cent of the crude oil of the country, hence it can dictate the price of gasoline. It can dictate the rate at which crude oil shall be sold to it, and if a company of capitalists get into their heads the foolish notion that they can buy crude oil and refine it in competition with the monopoly they soon discover that their profits are taken away from them in high freight rates by railroads controlled by Standard Oil magnates. The Standard Oil Company ships through pipe lines its oil from Indian Territory or Oklahoma to Buffalo, and can do it cheaper, whereas the independents must pay the freight fixed by Standard Oil railroad owners. There is no hope for consumers of oil and gasoline until the government owns the means of transportation, whether they be pipe lines or railroads, and give every producer a square deal.

"When an advance is to be made in gasoline the Standard has some of its agents masquerade as independents to contract with independent refiners for crude naphtha and gasolen so that the standard gets the benefit of the high prices it established.

"In recent years the Standard Oil Company has added to its ownership vast tracts of oil lands. With the monopoly of the source of the product, fortified by the railroads and pipe lines it owns, the Standard will maintain its power over the consumer no matter whether we have high or low tariff.

"Consumers ought to know the facts before they accept a Standard Oil explanation of higher prices. They should demand to know why the prices of crude oil go down and gasoline goes up, and especially why the value of Standard Oil stock soars while these operations are going on. The inference is plain, of course, that the same old Standard Oil game, so often exposed and apparently often forgotten, is being worked to extort monopoly tribute from the public."

STANDARD IN THE ASPHALT-BRICK BUSINESS.

Recently the Standard Oil Company has entered the field as a heavy purchaser of fuel oil. Many reasons for this departure from its former policy have been published in the press throughout the State, some even going so far as to announce that the Standard Oil Company had discovered a new process of refining these oils.

The Derrick is now able to present to its readers what it believes to be one of the potent reasons (aside from general business considerations) for this new phase of the Standard's activity.

The Standard Oil Company has gone into the asphalt business! At its refinery in Richmond there has been erected a complete asphalt plant. Besides the usual apparatus, there is a machine for making "asphalt brick." Here asphalt and sand are mixed and formed into bricks under enormous pressure. To prevent them from sticking together when stacked, or during transportation, the newly formed bricks are rolled in lime.

The bricks are designed especially for paving streets. When the lime is washed off with a hose and the bricks laid upon a properly prepared foundation, they soon become stuck together, forming a practically continuous pavement.

The advantages claimed for the bricks is that the street may be readily opened up for the laying and repair of water, gas and sewer pipes, since the bricks do not weld solidly together. No expensive asphalt plant is required at the place where the work is being done—the heating and mixing of the sand and asphalt having taken place at the factory. No doubt this feature (if the bricks stand the wear of ordinary traffic) will be a boon to small cities which could not go to the expense of maintaining an asphalt plant or of hiring an outfit every time a small piece of street was to be paved or repaired.

In the city of Richmond a considerable portion of a street is already paved with the new brick, but has not been down long enough to demonstrate its worth. From all indications, the brick seem to be the equal of the ordinary street-asphalt pavement.

For making asphalt, a low gravity of oil is desirable. Moreover, the distillates obtained therefrom, instead of being refined, are probably mixed with the residium obtained in the manufacture of illuminating oil, to make it flow more freely, for it has long been known that the Standard Oil Company's residium has been far from satisfactory as a fuel. We have no hesitancy in saying that the greater bulk of the distillate obtained from such heavy oil is absolutely unfit for the preparation of an illuminating oil, and will never be used as such. Some fractions of the said distillates will, however, undoubtedly make good lubricating oils.

Furthermore, it has been rumored for some months that the Standard has been unable to secure sufficient high gravity oil to operate its refinery to full capacity. Under such conditions, an expensive plant must in some way be turned to account. If high grade oil cannot be obtained, what is more natural than to turn to the utilization of the low grade oil and to make a market for the product?

These considerations, we believe, throw a new light upon the Standard's action, and will be a guide to the producers of the State in shaping their policy.

MEXICAN RAILWAYS REVERT TO USE OF COAL.

A shortage of crude oil of the required standard in the Ebano field, near Tampico, has caused the National Railways of Mexico to revert to the use of coal upon several of its divisions. The Mexican Petroleum Company, which controls the Ebano field, contracted with the Mexican Central Railroad a few years ago to furnish it with 6,000 barrels of crude oil daily for use in its locomotives. When the Mexican Central was taken over by the National Railways of Mexico this contract went with it. It has several years yet to run. It is provided in the contract that the oil must not contain more than 5 per cent water. The Mexican Petroleum Company was able to carry out the provision of the contract limiting the quantity of water until recently, when salt water began to appear in its wells. The percentage of water became so great that the oil-burning locomotives suffered bad effects from its evaporation upon the hot flue sheets. At present only 4,000 barrels daily of oil suitable for burning in locomotives are being furnished the railroad. A number of the 269 oil-burning locomotives are being changed back to coal burners. It is stated that these coal burners will be used only temporarily, pending the further exploitation of the oil fields and an increase in the supply of crude oil. In order to separate the oil from the water centrifugals are being installed at the wells. The use of oil has been a big saving to the railroad company. Four barrels of oil, costing $4.40, will do the service of $7 worth of coal, it is claimed.

ILLINOIS RUNS.

The runs from wells reported for August in the Illinois fields by the Ohio Oil Company were 2,411,483 barrels, as compared with 2,113,218 barrels in July. The August shipments were 2,432,431 barrels, being 1,052,431 barrels of regular deliveries and 1,380,464 barrels of other deliveries. The total July deliveries reported were 2,647,379 barrels. Stocks of Illinois oil held by the Ohio Oil Company at the close of August were given as 27,683,333 barrels.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

The Traders' Oil Company will complete the development of its lease by drilling in twenty-five new wells. There will then be forty-eight wells on the tract, and the expectation is that a normal production of 100,000 barrels a month will be disposed of.

Twenty-two complete outfits for the new wells are to be ordered shortly and bids have been asked from the supply houses. Machinery for three is already on hand.

A depth of 3,900 feet has been reached by the Claremont on its well on section 4-20-16. Good indications of oil have been encountered, and the management asserts that it will be able to determine whether or not the enterprise will be a success when another hundred feet have been drilled.

A few days ago the Fifty-Seven Oil Company, drilling on the northeast quarter of section 12, 21-14, struck the oil sand at a depth of 1,450 feet, penetrating it to a depth of 20 feet or more. The water has been cemented off in the ten-inch casing. After the job is made sure drilling will again be started to determine the extent of the sand. This development means much to this portion of the field and increased activity is already noted.

In section six, the De Luxe and Blue Moon have finished wells in the light sand which have been put on the pump and show every sign of being good wells, the old being around 23 gravity, an exceptionally valuable product. The Silver Tip expects shortly to have a producer in the same sand.

It is reported that the Good Luck Company has contracted with the Associated, agreeing to supply that company with 350,000 barrels of oil at 50 cents per barrel at the rate of not less than 6,000 barrels per month. The company has one completed well good for 100 barrels daily and another drilling. While it is hinted that there is something back of this deal, for oil is selling at 62 cents and promise to go higher, officials of the company claim that it is a good business proposition to make the contract.

The main oil sand has been found in well No. 4, of the Nevada Petroleum Company, in which George Wingfield is heavily interested. At a depth of 2,518 feet the sand was struck and entered for about 20 feet. The water has been cemented off above the sand and work has again been started towards deepening the well and determining the full extent of the stratum.

The Coalinga Aladdin, after some trouble with its well sanding up, is again on the pump and a good production is said to be coming from the well.

His success in the Fifty Seven well, prompted Z. L. Phelps, manager of that company, as well as many on section six, to procure more territory in that section of the field. He arranged a deal with W. C. Reilly, representing the Boychester Oil Company which has the northeast quarter of section 18-21-15, for the forty acres in the northeast corner, for the proving up of the quarter section. Phelps will organize a company to put down a well on the forty.

"While this particular section of the field has always been regarded as wildcat territory," said the oilman, "I have never regarded it as such, and it has been only lately that I have been able to go ahead and prove my contention. I always felt confident of the Fifty Seven property, and I will show you that I was right, in a short time, when the well is completed. I am satisfied that the trend of the field is in that direction. The sand streak in the Blue Moon is deeper than the Silver Tip. Then next consider the old Commercial well. I am thoroughly convinced as to the worth of that section of the field and I think we will get just as good if not better results on section 18." Phelps is not alone in this contention.

Drilling on the Imperial has been suspended and the work will be allowed to rest where it is until probably after the first of the year, says the Coalinga Record. The company bad three standard rigs and a rotary at work, and a few weeks ago the rotary and two of the standard rigs were shut down. No. 1 was kept going because of lost tools which it was determined to remove before this well too was stopped. No. 1 is about 3600 feet. While the company is not going to abandon the field, the work has reached that stage where a hold up was considered advisable. In the meantime the company's operations will be confined to the Kern River field. It is thought by the first of the year work will be resumed. While the drill in No. 1 did not get deep enough for oil, splendid indications were encountered.

The Marion is down 600 feet with 10-inch casing.

Thursday the air compresser of the American Petroleum on section 18 was set in operation.

The Valley, which cemented off at 2882, resumed work early this week and is now sinking 6-inch casing.

Manager Evans, of the Esperanza Land and Oil Company, reports the hole down 1800 feet, with 10-inch casing.

Good progress is being made in milling out the tubing in the Amy and it is expected that the well will soon be producing.

The Great Western, formerly the Coalinga Western, has its rig completed and drilling will be well under way before the next few days have elapsed.

The Loraine is going down with 4 1-2 inch casing, after a delay of several weeks, caused by delay in arrival of the pipe. The hole is more than 3500 deep.

The Southeastern, which is making good progress with a rotary, is closed down temporarily awaiting the arrival of drive pipe. It may be fully a week before operations are resumed.

The Coalinga National has begun work. Spudding in was accomplished within the last day or two and now the drill is going down. Marve Corey has the contract. Good progress will undoubtedly be made.

Wednesday evening eight hundred feet of water in the Muriel was bailed out and as the fluid did not again raise above the reduced height in the pipe, it is believed that the cement was successfully done. The hole was drilled to a depth of 2177 feet. There is about twenty-five feet of sand.

The Coalinga Metropolis Oil Company is soon to be incorporated to take over the lease on 40 acres in section 26, 19-15 recently acquired by Fred Meyerstein of the Metropolis Trust and Savings Bank, of San Francisco; G. H. Umbsen, the well-known real estate man, and Charles G. Wilcox, all of San Francisco. The property was formerly owned by the Porter Oil Company, and the consideration for the lease is said to have been around $1,000 per acre, or $40,000 in all. It is understood that J. O. Hickman, of Hanford, and Robert Hays Smith, of San Francisco, who were interested in the Porter, will re-

tain an interest in the new company.

The New San Francisco Crude Oil Company is notifying stockholders of the intention to increase the capital stock from 40,000 shares to 150,000, in order to pursue a campaign of development work now impossible without levying an assessment. This is a lesson to companies with too small capitalization. There is such a thing as too small capitalization as well as one with too many shares, although the valuation is dependent entirely upon the price at which the stock is sold.

SILVER TIP AND BLUE MOON.

The famous section six in Coalinga is again in evidence. The Silver Tip is reported to have come in for one of the largest wells yet drilled in California. The latest reports are to the effect that the gauge registers a capacity of 15,000 barrels daily and the well is said to have actually flowed at an 8,500-barrel rate. The oil is of high gravity, running between twenty-one and twenty-two. It is claimed that this is not the same sand in which the Lucile wells have been finished. The depth is 2,500 feet. If the Silver Tip holds up to the indicated capacity the famous Palmer gusher in Santa Maria will have to look to its laurels and it is entirely possible that Coalinga will take them away.

Now comes the Blue Moon in the same section with another big well and it is evident that all the talk among Coalinga people against section six will have come to naught. Some of our people never can see any good in anything but they will now have to shut up because the time for speculation as to the territory is past. Section six has the wells and the oil to show. It is a great section. Turned down a few years ago by the know-alls it is now in the front ranks among oil producing territory. Second to none in the country so far as the number of drilling operations is concerned it will undoubtedly lead in production in the same manner. Get off the fence you croakers of Coalinga.

M'KITTRICK.

Contractors on the Producers' pipe line are here getting ready for work. Arrangements for camps and supplies are being provided. It is stated that the first shipment of pipe to this point will arrive in two or three weeks and will be laid as fast as it comes in. The first shipment will consist of 37 miles of eight-inch pipe, seven miles of which will be delivered south of this point and the balance to the north.

The Carolina Oil Company, which was organized several months ago to drill farthest west of any present operations and which was promoted by local people, mostly practical oil men, who furnished supplies or labor in exchange for stock, has decided to reorganize and increase its capital stock from $30,000 to $300,000. Some changes have been made in the management and it is proposed to go ahead with all practical speed on the well which has now been started.

NORTHERN MIDWAY.

The Imperial West Oil Company is the name of a new concern to be organized to develop a lease in section 6, 32-23 in the northern portion of the Midway field. The lease consists of 20 acres. The principal owners are M. T. Taylor, V. N. Sandsted and Roy Clark of Los Angeles. The deal was negotiated by the Whittier-Campbell Investment Company of Los Angeles. The new company will have a capitalization of one million shares. Material has already been ordered and work will be started as soon as the plant is ready for operation.

The Whittier Campbell Investment Company is heavily interested in this section, and through the Traction Oil Company is developing a large tract by drilling one or more wells. Several test wells have been put down at various points in this territory and oil has been found in every instance warranting the drilling of deep wells.

SANTA MARIA.

The Union Oil company has 61 producing wells in the Santa Maria field which average 190 barrels daily. One of the Brookshire wells, which has been drilled three years and has produced something like 2,000,000 barrels of oil to date, is still producing between 900 and 1,000 barrels a day, a fine record for a three-year-old. In addition, it is said to be producing about 3,000,000 feet of gas a day. The biggest well of the Union is producing 1,200 barrels a day after nearly two years, a total of 1,500,000 barrels having been produced to date.

The Brooks Oil company, at Santa Maria, is reported to have gone into the sand at a depth of 2,900 feet. It is expected that a big well will be developed, estimated all the way from 2,500 to 5,000 barrels daily capacity. This is in wildcat territory, although not far away from the famous Palmer.

After a three-weeks' trial, the New Pennsylvania is reported to have demonstrated that it is capable of producing steadily at the rate of 1,000 barrels daily. This is also in Santa Maria.

DEVIL'S DEN.

The Devil's Den Consolidated Oil Company has oil. The Devil's Den Consolidated has no oil. Yes? No? What? Various newspaper reporters have as many theories and we presume none of them have been to the well. It is necessary to take the word of reliable officials of the company, as there is no occasion for them to deceive in the matter of whether or not they have oil. Upon the authority of an official of the company it is safe to say that the company has oil in commercial quantities, and further development will prove the extent of the oil sand already encountered and said to have been entered to a point where there is no question as to the fact of the existence of oil. Considerable interest has been aroused by the reports pro and con, and the public is apparently up in the air over the proposition.

PYRAMID OIL COMPANY TO BEGIN DRILLING IMMEDIATELY.

The Pyramid Oil Company, which is controlled by the G. S. Johnson Company of San Francisco, has contracted for a new drilling rig to be immediately installed on its property near Santa Paula, Cal.

Actual drilling on the first new well to be put down by the Pyramid company contemplate sinking five new wells on this The well will be sunk to a depth of about 1,500 feet, and should be completed within sixty days from the time that drilling is commenced. This well has been located just a short distance south of the big Clark Sherman well, which is said to produce more than 300 barrels of thirty gravity oil per day. The Pyramid company expects to bring in a well equally as good. The present development plans of the Yyramid company contemplate sinking five new wells on this property as rapidly as possible.

The Hilltop well, which is being sunk within fifty feet of the northerly side line of the Pyramid property, has reached a depth of 350 feet. Good progress is being made, as drilling conditions in this vicinity are unusually good.

WHITTIER AHEAD.

The Central Oil Company, that owns over half the Whittier field, the latter part of August drilled its No. 52 into the light oil sand at 2,500 feet and a gusher that has flowed into thousands of barrels daily between its periods of sanding and small amounts—up to hundreds of barrels when partly sanded or partly under control. The oil tests 35 gravity, a magnificent refining article.

The Central has four other wells about to tap lower sand, some of them new ones, the rest old wells, that formerly pumped from the beavier oil sands above. In the north end of the field, a mile and a quarter from tbe others, No. 49 is being drilled and is down 1,000 feet. Right by this another was drilled last year to below 2,500 feet and had oil, but was lost by a collapse of the casing. The Central bas paid quarterly dividends for years.

STANDARD ABANDONS ITS LOCATIONS IN MONTEREY AND SAN BENITO COUNTIES.

LOS ANGELES, Sept. 20.—The Standard has abandoned all its locations in the Monterey-San Benito county districts, pulled tbe casing in all and quit. It is expected that it will surrender its leases and seek elsewhere for tbe oil which it desires for the Point Richmond refinery in tbe future. The final abandonment and dismantlement of the wells took place about September 1.

How much the work cost the big company will be forever unknown save to few officials on the inside. Its total failure is without doubt a bitter disappointment; tbe more so, as it now looks as if the Standard had located on both sides of the real oil field, leaving the belt itself to others, as tbe Lonoak has oil—how much no one knows yet—in its well in Alvarez canyon, about half way between Topo Valley and Peacbtree, where the Standard drilled.

When it began operations the Standard started seven strings, four at Topo and three at Peachtree. Why so many were put in such proximity puzzled some oil men. Later the 1700-foot dry hole of the Topo Valley Oil and Development Company, a Los Angeles concern, and started to go deeper, at the same time suspending all other work in Topo Valley, and all at Peachtree except the Landrum No. 1. None of the suspended Topo wells went below 1,000 feet.

The Union months ago abandoned its San Lucas, between San Ardo and Peachtree, at close to 2,500 feet. E. L. Doheny and associates soon abandoned work at Peachtree and San Ardo.

The Standard acquired more land at Bradley, south of San Ardo and southwest of Peachtree, and one bole, Powell No. 1, was started. This, too, has just been abandoned.

In the Midway the Standard has no oil except on the Jameson lease, formerly the Talara, on section 24's, southwest corner, purchased from Scribner & Porter, wbere eight fair wells are pumping, and on the Big Four lease on 30, wbere oil has been struck and the holes cemented, but notbing produced so far.

As to the Raphetto Hills, east of Los Angeles, it is much too soon to pass an opinion. No. 1 is down 1,600 and No. 2 at 1,900 odd feet. Both were bored to these depths with votaries and they have put in the cable to continue.

WILL DRILL IN DEVIL'S DEN.

The Portola Oil Company, a recently organized corporation, has completed arrangements for the taking over of the Express Oil Company well on section 22, 23-17, in the Devil's Den, which has been drilling under the supervision of Art Anderson. The Portola is to receive one half of the section, the northwest, the line being run diagonally, for proving up the land. It has been capitalized for $500,000 divided into $1 sbares. An issue of 300,000 sbares has been authorized. Louis Einstein, the Fresno capitalist, with business associates, is principally interested in tbe company. The directors are: C. E. Whitney, C. A. Murdock, F. C. Brothers, R. D. Gerrard and W. E. Tracey.

The well is down about 500 feet with 10-inch casing. It is located little more than a mile southwest of the El Cerrito well in the more shallow territory. The new owners will continue with the present well. Art Anderson will have charge of the operations.

PREDICTS SHORTAGE WITHIN EIGHTEEN MONTHS.

G. W. Dallas, secretary of the Coalinga Producers' agency, stated recently that the conclusion arrived at by all the members of the two independent agencies is that the trend of events indicates that there will be an actual shortage of oil within the space of a year and a half.

"There can be little doubt," said Mr. Dallas, "that the present surplus will have been met and passed by the demands of the consumers within eighteen months or tbereabouts. Every condition in the various fields and in tbe markets point irresistibly that way."

TWO NEW COMPANIES.

Articles of incorporation for the Colt Oil Mining Company have been filed with the county clerk of Kings county. The principal place of business is given as Lemoore and the five directors named are C. W. Barrett, W. H. Thompson and Alvah E. Clow of Hanford and J. J. Smith and W. H. Reyburn of Lemoore. Tbe capital stock is placed at $200,000, divided into 200,000 sbares of the par value of $1, of which 102,000 sbares bave been actually subscribed.

The Lemoore Oil Company has filed its articles. That city is given as its principal place of business and the seven directors named: Andrew McGlasban, H. W. Byron, J. H. McGlashan, Oscar Odale, Stiles McLaughlin, A. L. McKay and L. H. Byron; are all residents of Lemoore. The capitalization is $300,000, divided into as many shares at par $1.

MADISON CONTRACT.

Max Grossmeyer has been awarded a contract to drill three new wells contemplated on tbe lease recently acquired from R. P. Benedict by the Madison Oil Company.

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SUNSET-MIDWAY.

The Wellman has constructed two fine 55,000 barrel tanks upon its land, the southwest quarter of section 36-12-24, at a cost of close to $50,000. It has two wells finished and producing an average of over 300 barrels a day. It has two wells drilling and two more rigs up. These wells lie along the south line of the property and just across the section line from the Monte Cristo's fine wells.

The well known attorney, Burke Corbet of San Francisco, has recently purchased forty acres of land in the Midway oil district for $1,250 per acre. The land is known as the "Miller Forty," and is described as the southwest quarter of the southwest quarter of 23-32-23. The land is patented. It is understood that preparation is being made to develop the land extensively within the next year or two.

There is going to be a new town in Sunset. The Southern Pacific people have recently landed a bunch of terracotta chimneys on its section 31 in the Southern quarter and dirt will shortly begin to fly. This may mean a new center for the district although Maricopa will undoubtedly remain on the maps for some time to come.

The La Blanc, which has had a fishing job on its hands for several weeks—which has also been shutting off the water has again started drilling. After the cement in the pipe has been drilled through rapid progress will be made towards the completion of the well. The main sand is expected within 50 or 100 feet, as the formation indicates this. John La Blanc is now personally in the field. Mr. La Blanc is president of the company. The property is in section 6, on the flat where the big wells are expected.

The Lady Washington in its well No. 2 has succeeded in removing the spear which was lost in the hole and drilling is again in progress. It is reported that this well penetrated the main sand from 60 to 80 feet and encountered oil in considerable quantities, the estimate of those who saw the well when the sand was penetrated being as high as 250 barrels a day. The well however is not completed, but there is every indication of its being a handsome producer.

Another encroachment on the desert waste in the interest of humanity; another oil well to add to the riches of our state and its citizens; another big gusher on the flat to extend the proven territory of this wonderful field.

Section 31, 31-23 where the Crandall party has been drilling has brought in a well at 2235 feet which sent the oil sky-high displacing tons of drilling water and sending up great quantities of oil easily 200 feet above the derrick.

This will be sad news to the man who thinks the flat is nonproductive territory, for it is another step, or leap, towards extending the oil lands out onto the flat. Owners of land there are jubilant over the increasing values and predictions are many that another twelve months will see the flat covered with rigs.

The California-Midway drilling on Section 32 which adjoins, is down 2200 feet and expects to get oil within the next 100 feet. The operations of these two companies have added at least a half mile to the known oil territory of that section.

The Sunset-Monarch well on 26-12-24, which was reported in a recent issue of the News as a 200-barrel well, has increased its capacity to a 750 barrel pumper. The important part of the development of that part of the field is in the fine light oil that this new well is yielding, the gravity being about 20 or 21.

The Johnson company on section 7-11-23 is about ready to cement off the water at 1500 feet with the eight-inch.

Much trouble has been experienced in getting the bridge started owing to the great gas pressure, but this has finally been accomplished and it is believed that there will be no further delay. As soon as the cement is ready drilling will be resumed and the company will go down with the 6 inch to finish the well.

Oil was originally struck at 1805 feet. The drill was sent down forty to fifty feet further, a sufficient depth to demonstrate to the satisfaction of the management that oil in paying quantities had been struck.

Weaver & Schultz have the new Adeline rig almost completed. Adjoining it the Adeline people have cleaned out an old hole and are drilling. The well has been a small producer. but it was determined that the full product had not been reached.

The Santa Fe is said to be shipping in the neighborhood of 600 barrels daily to the mining fields of Arizona and to the coal mining districts of New Mexico.

Barnstable, Yancey & Drake have a fine light oil on 19-31-22, northwest of Midway. This is their first well and the oil was encountered at a comparatively shallow depth.

The No. 3 well on the Muscatine is progressing satisfactorily, having reached a depth of 435 feet.

The Loma Vista people have succeeded in shutting off the water which had been a source of stubborn resistance to the progress. Drilling is to proceed with all possible speed from now on.—Maricopa News.

The Standard Oil Company for months drilling a deep hole with a rotary on the east line of section 14-32-23, just across the railroad track from this town, is in oil at 2700 feet. The gravity is light.

The extent of the strike can not be definitely prophesied at this time, but the oil shows in good volume through the

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long column of drilling water, and the officials in charge of operations seem particularly elated. Outside of section 30-32-24, where operations are close to the rich Knob Hill of the Midway and where there are indications of a fine well, the present strike is about the first of importance made by the big company in its wildcat operations on the Midway flat.

If the hole when completed shows up as well as is now indicated it will be refutation of the charges made against the rotary and will prove that a deep hole can be drilled in that manner for less money and quicker than with a standard rig. The Standard is very loyal to the rotary and in spite of failures by that method has stuck to its use where others have abandoned it. This well nas been drilling for many months, and was originally started with a standard rig. Since the installation of the rotary good time has been made and the expense has been much less than by the other method.

Some difficulty may be experienced in shutting off a rather stubborn flow of water, but this can in no way effect the fact that the Standard has entered rich sand and will immediately develop a good well and a new territory.

The completion of the well will be awaited with much interest. If it is a good well it will indicate that the Midway flat is all oil bearing, which is evidently the position taken by the Standard, as it has acquired a considerable area of wildcat land and has several rigs drilling in that territory.

A strike of the utmost importance to the entire country hereabouts has been reported to the News. Another well on the flat due to the high grade oil sense used in the development of the Bear Creek property on 14-31-22.

The new well is at least a half a mile further out on the flat than the Crandall strike reported last, although not in the same section.

The oil sand was entered at about 600 feet and the oil at 685 feet. No figures as to amount of the flow nor on the probable gravity are obtainable at this time.

Practically co-incident with the success of the Bear Creek well is a similar result on the Majestic property in the same township and range, but in section 14.

There oil has been encountered at 1035 feet. The properties are situated about midway between Midland and McKittrick, and though separate organizations, are officered by practically the same men.—Maricopa News.

VENTURA COUNTY.

The Model Company is making good progress in its well now drilling and expects to have it completed in a very short time.

The Harris Oil Company is still fishing for its tools on one well. The hole has been straightened on the other one and drilling is again going ahead.

The Bardsdale Crude recently deepened one well which was very shallow and produced oil of about 15 gravity. At the lower depth the well is said to be doing 100 barrels daily and the oil is of 22 gravity or better. Other work of the same nature will be done on this property as well by other operators who will profit by the experience of the Bardsdale.

The Capitol Crude is progressing in good shape on its No. 1 well, which is in proved territory.

At a depth of 2200 feet the Bard encountered a heavy gas pressure. There is every indication of securing a deeper sand than any yet encountered.

The Ventura Oil Development Company has completed the grade to the top of the Mesa and is hauling lumber for the camp and for rig No. 1 and expects to start drilling about October first. The ground consists of 640 acres in entire section.

The Liberty Oil Company is engaged in repairing the derrick on well No. 1 and is establishing a permanent camp. It expects to be producing within ten days from this well. Others are to be drilled as rapidly as possible on the 125 acre tract recently taken over.

Forest fires have caused considerable damage in the vicinity. The Bardsdale property of the Union, losing one 250-barrel tank of oil and the Torrey Canyon the same amount.

The Union has about 100,000 acres in Ventura County and is now engaged in cleaning out all the old wells and making preparations for further extensive drilling at various places. The Union expects to get a large proportion of its refining oil from this county in the future.

Its property is so extensive that it will be years before it will be fully developed and hundreds of thousands of dollars will be spent before the campaign just begun is completed.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Apparatus for pulling oil-wells, David A. Keller, Toledo, Ohio, 430, 480.

Deep-well pump, Homer W. Price, Oakland, Cal., 930, 614.

Well-drilling apparatus, Henry B. Walker, Mount Vernon, Ohio, 931, 101.

Goggl-valve for gas-mains, Leonard Shaw, Chicago, Ill., 931, 506.

Method of treating and utilizing petroleum residues, Vaclay Kridlo, Prague, Austria-Hungary, 931, 772.

Pump-jack, Ezra B. Zook, Leola, Pa., 931, 931.

Underreamer, John W. Brackney, Fullerton, Cal., 932, 533.

Rope-socket clamp, John W. Brackney, Fullerton, Cal., 932, 533.

Rope-socket clamp, John N. Johnston, Butler, Pa., 932, 556.

Heaving-plug for wells, Daniel Daniels, Los Angeles, Cal., 932, 766.

Pipe-coupling, James Clark, Bradford, Pa., assignor to S. R. Dresser Mfg. Company, same place, 932, 963.

NEW LISTINGS.

The Bay City, Mecca, Sesnon, Traders, American Petroleum, Premire and Cresceus are some of the new companies recently listed on the San Francisco Oil Exchange. Several are already dividend payers.

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are found today in California Oil. The production during 1909 will net the producers about $45,000,000. The dividends being paid by California Oil Companies are enormous. More money will be made out of California Oil investments during the coming generation or two than have been made out all of the gold mines discovered since time began. NOW is the time to invest in California Oil stocks if you wish to make tremendous profits during the coming year.

We make a specialty of oil investments, and can tell you which stocks to buy to make the largest profits. For the information of our clients we issue semi-monthly the

CALIFORNIA OIL BULLETIN,

which we will send to you regularly as issued absolutely free upon request. It tells the interesting and astonishing facts about the oil industry in California, and gives the news from all of the oil fields of the State. Write us today to place your name on our regular mailing list. Address:

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PORTER MAKES MONEY.

W. S. Porter, general manager of the Associated Oil Company, has sold to W. C. Price, of Los Angeles, who represents the Wellman Oil Company, one-half of the northwest quarter of section 25-9-33 in the Santa Maria field. The sum paid was $500.00 per acre, a total of $40,000.

This land cost Mr. Porter $8000 between one and two years ago. It lies alongside the quarter section on which the Palmer well is located and was purchased after the strike had been made by that company.

DIVIDENDS.

Monthly Statement of Dividends Paid by Active Listed Oil Companies to August 31, 1909, as Posted on the Blackboard in the Boardroom of the California Stock and Oil Exchange.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Sept. 22, '08	.03	11,400	$ 136,800
Amalgamated	Aug. 15, '09	1.00	50,000	1,250,000
American Pet.	Aug. 1, '09	1.47	144,648	450,711
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated Oil	Mar. 1, '07	1.50	446,055	1,548,368
Bay City	Aug. 10, '09	.30	30,000	40,000
Brookshire	Aug. 1, '09	.02	10,000	412,000
Caribou	Aug. 15, '09	.25	20,175	559,301
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Coalinga Pacific	July 28, '09	.10	6,500	89,050
Columbia	Aug. 25, '09	½c	4,996	224,833
Esperanza	Aug. 5, '09	.01½	2,400	36,650
Euclid	Aug. 1, '09	.01	3,500	99,500
Four	Aug. 25, '09	.01	3,000	204,000
Globe	July 1, '09	.01	6,000	69,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	Aug. 20, '09	.02	2,000	460,000
Homestake	Aug. 5, '09	.10	1,000	74,250
Illinois Crude	Aug. 1, '09	.01	2,000	74,000
Imperial	July 7, '09	.60	60,000	1,820,000
Junction	June 1, '09	.01	2,500	20,000
Kern River	Feb. 3, '09	.10	2,000	98,000
Linda Vista	July 8, '09	.10	3,838	57,577
Lucile	July 12, '09	.10	2,670	34,715
Mexican Pet.	Aug. 1, '09	.01¼	80,000	2,880,000
Mecca	July 1, '09	.03	12,675	59,150
Monte Cristo	Aug. 16, '09	.03	15,000	310,000
Nevada County	Oct. 13, '08	.04	10,000	40,000
Palmer	Aug. 15, '09	.02	36,040	106,200
Peerless	Aug. 20, '09	.06	6,000	795,000
Piedmont	Aug. 20, '09	.01	3,890	22,987
Pinal	Aug. 31, '09	.10	15,000	804,841
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Record	Aug. 16, '09	.05	5,000	10,000
Reed Crude	July 25, '09	.05	5,000	1,112,000
Rice Ranch	Aug. 15, '09	.01	3,000	78,000
Royalty	Aug. 10, '09	.03	600	6,000
S. F. & McKitt'ck	Aug. 1, '09	.30	15,000	210,000
Sauer Dough	Aug. 26, '09	.05	9,957	418,950
Sesnon	Aug. 25, '09	.15	15,000	15,000
Sovereign	July 1, '09	.01	5,000	80,000
Sterling	June 15, '09	.25	62,500	622,000
Superior	July 20, '09	.01	5,000	45,000
S. W. & B.	Aug. 10, '09	.01	3,770	37,700
Thirty Three	Apr. 6, '07	.30	30,000	640,000
Traders	Aug. 15, '09	1.00	11,550	89,050
Union	Aug. 25, '09	.50	124,813	5,494,564
United Pet.	Aug. 25, '09	.50	40,375	1,896,331
Wabash	Aug. 16, '09	.01	3,000	99,000
West Coast	July 25, '09	2.00	20,816	41,632
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000

Total Dividends Paid to Date.....$24,866,115
Total Dividends paid by the above companies for August, 1909—$670,733.76.

$700,000 IN DIVIDENDS THIS MONTH.

Dividends declared thus far during the month of September amount to over $600,000, and those yet to hear from will bring the total to over $700,000, a record-breaking month, something like $30,000 more than in August.

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LATEST QUOTATIONS ON CALIFORNIA STOCK AND OIL EXCHANGE OF SAN FRANCISCO.

	Bid	Asked
Apollo	.06	
Associated Oil Tr. Cer.	33.50	
Bay City	.95	
Brookshire	1.17	
Caribou		16.00
Chicago Crude	.08	
Claremont	2.00	2.25
Esperanza	1.55	
Four	.28	
Fulton	1.50	1.75
Graciosa		.40
Gypsy		.21
Home	.75	1.05
Illinois Crude	.39	.40
Imperial		50.00
Kern	.60	
Kern River		12.00
Linda Vista	.40	.45
Lucile	12.00	15.00
Mecca	1.10	1.15
McKittrick	.09	
Monte Cristo	2.77½	2.82½
Nevada County	.23	
Paraffine	.75	.90
Palmer	1.45	
Peerless	5.12½	6.00
Piedmont		.20
Pinal		10.00
Premier	.40	
Producers'		2.50
Record	5.00	
S. F. & McKittrick	20.00	
Sauer Dough	2.30	
Section 25		9.00
Sesnon	6.00	
Sovereign		.22
S. W. & B.	.40	
Sterling	2.85	3.00
Turner	.80	.90
West Coast (pref.)	85.00	
Wolverine	.20	
W. K. Oil Co	2.25	2.30

LATEST QUOTATIONS ON LOS ANGELES EXCHANGE.

	Bid	Asked
American Crude Oil Co	.87	.90
American Pet. Co. (pfd.)	70.00	72.00
American Pet. Co. (com.)	52.00	54.00
Associated Oil	34.40	34.50
Billiken Oil Co	.15	
Brookshire Oil		1.80
Central	1.34	
Columbia	1.23	1.27
Continental Oil	.37	
Elk Consolidated Oil Co	.04	
Euclid Oil Co	.50	.60
Fullerton Oil	1.95	
Globe	.19	.22
Jade Oil Co	.10	
Mexican Petroleum	1.75	1.37
Mexican Petroleum Ltd. "Pfd"	67.00	70.00
Mexican Petroleum Ltd. "Com"	27.00	27.25
Amalgamated Oil		85.00
New Pennsylvania Petroleum Co		.77
Olinda Land Co. (Oil)	.30	.38
Palmer Oil Co	1.35	1.50
Perseus Oil Co		.35
Pinal Oil Co		13.00
Piru Oil & L. Co	.15	
Provident Midway Oil Co		.30
Reed Crude	.25	
Rice Ranch Oil Co	1.10	1.35
Trader's Oil Co	101.00	
Union	104.75	
Union Provident Co	103.25	103.50
United Petroleum	106.00	107.00
West Coast Oil Com	9.00	
Western Union		100.00

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Oil exceeded gold in value last year by nearly $10,000,000. This year it will exceed gold by more than $12,000,000. The industry is just in its infancy, although it is 24 times greater than it was ten years ago.

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We advised Templar Ranch when it was ten cents. It is now 30 cents. We advised San Francisco and McKittrick when it was $13.00 per share. It is now $25.00. We advised the purchase of Monte Cristo when it was 95 cents. It is now $2.85. Then there was Lady Washington at 10 cents. It is now 50 cents.

NOW IS THE TIME to investigate the oil business, for you will be looking into the face of fortune.

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Vol. 2 San Francisco, Cal., October 1909 No. 6

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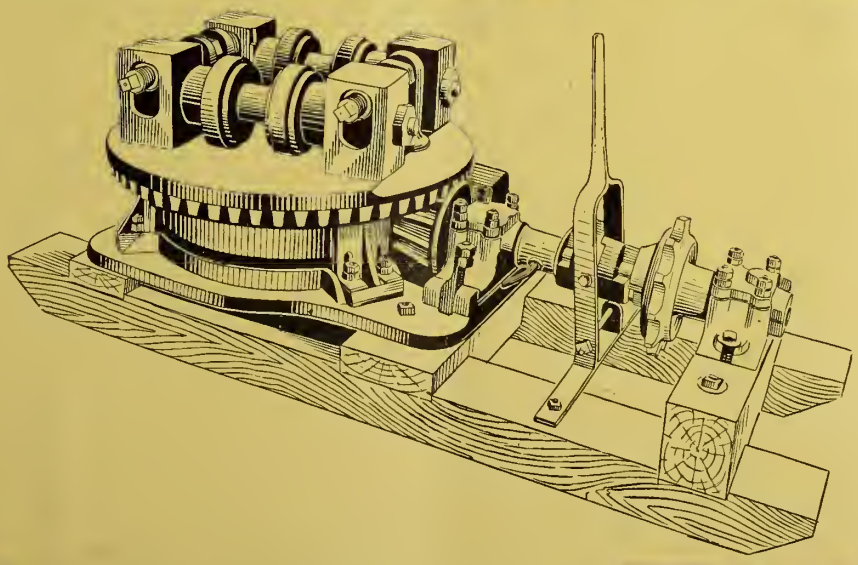

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Vol. 2 San Francisco, Cal., October, 1909 No. 6

LANDS WITHDRAWN FROM ENTRY

A most disturbing element has been injected into the oil business of California by the Secretary of the Interior in withdrawing from entry a vast stretch of territory. The land extends from Mt. Diablo and beyond, southeast several hundred miles, almost to Mt. San Emedio at the extreme southern end of the San Joaquin valley, and in breadth is sufficient to embrace every tract that could possibly be conceived as being petroleum bearing. It seems to be clear that all who have been drilling on the public domain with resulting discoveries prior to September 27th are estahlished in their rights to possession and to the privilege of proceeding to patent. However, there are millions being expended upon land where no discovery had been made upon the date named and the fate of these is in the balance. In addition thereto, probably hundreds of thousands are, or were, to be expended in the search for oil within the region described by the Secretary, and now it is impossible for the owners of this capital to decide upon the proper course to pursue.

It is not supposed to be the intention of the government to make any ruling that will interfere with the legitimate location and development of oil lands. It is most likely to result disastrously to many who are holding lands or attempting to hold them purely upon location. It is most likely that the government will recognize all legitimate filings wherever good intention can be shown to drill for oil and establish the value of the ground for the production of oil. No legitimate operations need fear the government's final action.

In view of the great interest which attaches to the recent withdrawal from entry of the California oil belt, as regards its effect on the filings on oil lands, a Visalia Delta representative interviewed one of the prominent attorneys of this city with regard to the matter. His opinion follows:

"In view of the recent order of withdrawing certain lands classed as petroleum oil lands it would be well to examine the law with reference thereto before reaching any conclusions.

Language of Statutes.

"Section 2319 of the revised statutes provides that all valuable mineral deposits in lands belonging to the United States are free and open to exploration and purchase by citizens of the United States and those who have declared their intention to become such. Petroleum oil is classed as placer and is located accordingly, and if taken by an individual a location can be made on twenty acres, but if by an association of persons than they may take 160 acres in each claim or location. As the law now stands there is no limitation to the number of locations.

"A discovery of minerals is required to be made before a location is valid as against one who shall make discovery first.

"Section 2314 of said statute provides that locations must be made, giving the names of the locator, the date of the location and a description of the claim or claims, and the last legislature of California passed a law requiring such locations to be recorded. So that now no claim is complete without both discovery and location.

Patents Obtainable.

"As the law now stands patents may be obtained through the United States land office and the interior department after discovery shall have been made and five hundred dollars' worth of labor has been expended, or improvements made up on the claim, upon paying in addition thereto $2.50 per acre and showing that no adverse claim exists, but if there is such then the adverse claim must be first disposed of. This is the first time that the United States land office has anything to do with a mining claim, for the notices are posted on the mining land and recorded in the recorder's office without knowledge or reference to the land office.

"The interior department may withdraw lands from entry list, but such act does not in any way affect the legality of claims already existing, as it merely prevents further filing of claims until the order shall be revoked.

"The law proposed to be passed by the next Congress can not be retroactive, and if so would be unconstitutional. So, therefore, any claim which shall be valid at the time such proposed law shall be passed, will not be affected by such law, nor could be, for the old law will be in full force and effect until it shall be repealed, and it cannot be repealed until Congress meets. The effect of the recent order of withdrawal will be to protect claims already existing because they cannot be jumped."

SEPTEMBER EXPORTS.

Petroleum exports for September were materially greater than for the same month last year, the large increase being in crude oil. San Francisco, Sabine and Philadelphia contributed the excess. The increases were in illuminating oil, lubricating and paraffine. There were decreases in napthas and residuum, the latter reaching 3,020,183 gallons.

For the nine months ending with September, the increase in the total is 1,468,361 gallons.

For nine months the increase in exports of crude from San Francisco has been more than 21,000,000 gallons and from Sabine almost 23,000,000. The losses in illuminating are due to sharp competition from Gallicia, Borneo, Sumatra and Burma. The Russian industry has also shown marked increase since the first of the year, the first sign of recovery since the disasters coincident with the Japanese war and the revolutionary riots.

The following table shows the total exports and values for September 1908 and 1909, with increase or decrease in each product:

	Gallons.	Dollars.
Crude—		
September, 1908	8,080,177	404,187
September, 1909	23,141,614	820,847
Increase	15,061,437	416,660
Napthas—		
September, 1908	4,456,369	466,670
September, 1909	2,517,692	190,533
Decrease	1,938,677	276,137
Illuminating—		
September, 1908	100,030,872	6,600,923
September, 1909	101,819,614	6,494,341
Increase	1,788,742	106,582
Lubricating and Paraffine—		
September, 1908	13,603,117	1,643,943
September, 1909	15,280,619	1,857,754
Increase	1,677,502	213,811
Residuum—		
September, 1908	9,829,995	340,597
September, 1909	6,809,812	245,671
Decrease	3,020,183	94,726
Total Mineral Oils—		
September, 1908	136,000,530	80,569,531
September, 1909	149,569,531	75,089,422
Increase	13,569,001	5,877,732

PETROLEUM EXPORTS.

Compiled by the Bureau of Statistics, Department of Commerce and Labor.

	September	
Crude Oil—	Gallons.	Dollars.
Baltimore		
Boston and Charlestown		
New York	5,225,685	293,274
Philadelphia	2,997,816	186,040
Galveston		
Sabine	7,606,094	228,053
San Francisco	7,312,019	113,480
Total	23,141,614	820,847
Napthas—		
Baltimore	14,250	1,974
Boston and Charlestown		
New York	1,869,500	148,110
Philadelphia	663,342	40,338
Galveston		
Sabine		
San Francisco	600	111
Total	2,517,692	190,533
Illuminating—		
Baltimore	2,298,118	137,889
Boston and Charlestown	4,001	448
New York	63,797,071	4,387,346
Philadelphia	29,268,289	1,641,163
Galveston	3,250	461
Sabine	4,525,831	242,481
San Francisco	1,923,054	84,553
Total	101,819,614	6,494,341
Lubricating and Paraffine—		
Baltimore	506,300	71,119
Boston and Charlestown	19,177	3,310
New York	10,636,434	1,377,664
Philadelphia	3,833,785	373,032
Galveston	210,770	19,067
Sabine		
San Francisco	74,153	13,562
Total	15,280,619	1,857,754
Residuum—		
Baltimore	289	15
Boston and Charlestown	10,000	380
New York	40,410	2,605
Philadelphia	3,484,319	127,706
Galveston		
Sabine	3,268,494	114,398
San Francisco	6,300	567
Total	6,809,812	245,671
Total Mineral Oils—		
Baltimore	2,818,957	210,997
Boston and Charlestown	33,178	4,138
New York	81,569,100	6,208,999
Philadelphia	40,217,551	2,308,279
Galveston	214,020	19,528
Sabine	15,400,419	584,932
San Fraucisco	9,316,126	212,273
Total	149,569,351	9,609,146

OKLAHOMA CONDITIONS.

Continuation of tribulations sums up the reports from Oklahoma. Low priced oil; lack of piping and storing facilities; further complications from department regulations; no additional move by the Standard toward building the Baton Rouge or Gulf line; the State of Oklahoma still refraining from loaning its legislature to the Standard or Prairie Oil & Gas Company for a session; the Mid-Continent Oil & Gas Producers' Association continuing to make no move toward promoting any competition in storing, piping or marketing facilities, though having already contributed enough in the form of low priced oil to have built several lines to the Gulf or elsewhere—these are some of the more salient features of the Oklahoma situation. The royalty muddle, represented in the effort of the interior department to compel operators to pay the Indian royalties on the basis of a higher price than the operators are themselves receiving, has been cleared but slightly by the action of the department in permitting the purchasing agencies to withhold temporarily out of the lessees' share of the oil the difference between the price the agencies are payiug and 41 cents, the last named price being the one recently fixed by the department, until further notice, as the basis for royalty payments. From Washington comes reports that in connection with the consideration of this matter the government may institute suits not only against the Standard or Prairie Oil & Gas Company, but also against the Texas Company and the Gulf Pipe Line Company for the way they have held down crude prices. In the field situation there is little change reported, except that of necessity there is considerable curtailment in operations.

In its review of operations in the Oklahoma-Kansas fields for the past month the Independence, Kan., Reporter, says:

"The total number of completions for August was 258 wells. Of these 190 were successful in finding oil, 35 were gassers,

33 were failures, and the estimated new production on thirty days' basis, was 10,939 barrels. Compared with July this was a decrease of 73 wells drilled, 49 producers, 1 gasser and 23 failures and a falling off of 2,123 barrels new production. In July there were 331 completions, 239 oil wells, 36 gassers, 56 failures and 13,062 barrels new production. To show how development work has fallen off, in April 406 wells were drilled and in May 405 were completed. There is more oil being run now than for several weeks, and yet the pipe line companies are far from able to handle all the production of the field."

OKLAHOMA GEOLOGY.

L. L. Hutchinson, assistant director of the Oklahoma geological survey, who has been spending some time investigating the mineral resources of Marshall county, delivered a recent lecture at Madill, in the course of which he spoke of the oil and gas possibilities of that region in part as follows:

"The Marshall county oil field has always been of great interest to me from a geological standpoint. Oil and gas occur here under geological conditions different from those of any other part of the State, for they are found near an unconformity between the rocks of Pennsylvania age and those of the Cretaceous age. That is to say, at the close of Pennsylvania times the sea receded and left the old sea bottom as a land surface for a very long time, then finally the sea encroached from the south and several hundred feet of sediment were deposited on the old land so that what was on the land surface for centuries now lies buried about 450 feet beneath us. The oil and gas occur in pockets of gravel and coarse sand near the contact between the old and new rocks. This makes it impossible for a geologist to determine the most probable places to drill. The color, character and fossils of the rocks of Marshall county have always caused me to have confidence in the petroleum possibilities of the region even before development was well begun and I still expect to see the time when Marshall county shall contain larger paying development than now. I wish to drop one word of caution; the sedimentary rocks thin out as one goes northward until we reach the granite near Teller. Pay oil has never been found in granite, nor will it be."

TRINIDAD OIL DEVELOPMENT.

The United States imports the greater part of its asphalt from Trinidad. The following report from Consul Franklin D. Hale, of Port of Spain, in that island, indicates that other resources are to be developed:

"Deposits of coal and oil have been known to exist in Trinidad for many years, but the coal is of an inferior quality and the oil deposits have never been extensively developed, hardly sufficient for home demands. But increasing local demands and a general spirit of stimulation have prompted a resumption of active work on the Mayaro oil fields, situated inland about thirty-five miles east of Port of Spain. The Oil Exportation Company is now employing a large number of men in road and bridge building and repairing and getting machinery in order to resume drilling operations, which have been suspended for some time. New borings will be made and the fields more fully exploited. Necessary tramways will be constructed from the oil fields to Quayagnagare Bay, where a jetty will be built to facilitate the shipping of the oil. Patent bungalows are being brought from Europe for the housing of the Europeans thus employed.

"The New Trinidad Asphalt Company, operating at Pitch Lake and Brighton, where an oil deposit also exists, is erecting, at large expense, two steel storage tanks for crude oil, having a capacity of 65,500 barrels, nearly 2,000,000 gallons. These tanks are 115 feet in diameter and 30 feet high. One of them will shortly be ready for use. Wells have already been sunk to the depth of 900 and 1,000 feet. This American company has thus far exploited the oil industry only for its own use, but now intends to greatly develop this natural resource of Trinidad and store the oil subject to the demands of trade.

"If the development of these oil fields shall prove profitable, as it is confidently expected, another important item will find its place in the export statement of Trinidad."

ENLARGING MEXICAN PETROLEUM OPERATIONS.

A syndicate of Pennsylvania men who are operating under the name of the Pennsylvania Fuel Oil Company, has brought in a good flow of oil in a well bored upon its property near Los Esterod, in the Tampico district. Exploitation work has been in progress in that locality for several months.

The Mexican Petroleum Company, which is composed chiefly of California men, is preparing to enlarge its operations in the Ebano and other districts adjacent to the Gulf coast, where it has extensive oil land holdings. The company recently paid its regular monthly dividend of $48,000 gold, making a total of $3,000,000 gold which it has distributed among its stockholders from its operations since its organization a few years ago. It is stated, however, that a considerable part of these profits come from the company's asphalt and street paving work. It will enlarge its refinery at Ebano and enter the crude oil market of this country in addition to continuing to supply the National Railways of Mexico with about 6,000 barrels daily for use as fuel in the locomotives of that company. The company is building an oil pipe from the Huasteca field, State of Vera Cruz, to the Panuco River, a distance of about one hundred miles. The oil will be carried in barges from the terminus of the pipe line to Tampico. This pipe line will be finished about March 1, 1910.

A number of prospecting wells are to be bored in the Yaqui River Valley, State of Sonora, in far western Mexico, by J. C. Darrow, who is said to represent the Southern Pacific Railroad in Mexico. Efforts are being made to develop oil at various points on the Pacific slope along the route of this new railroad in order to provide a supply of fuel for operating its locomotives. It is claimed that good surface indications exist in the valley of the Yaqui River, where Mr. Darrow is to carry on his exploitation work.

HALF MOON BAY.

The High Gravity United Oil company, which is a consolidation of several lesser concerns that have operated in the Half Moon Bay district, near San Francisco, is preparing to begin work by the drilling of a well at a location selected by government geologists.

According to these geologists, all drilling heretofore undertaken have been at points away from the main strike. It is believed that a 1500-foot hole at the point decided upon will enter the oil formations, securing the true deposits, from which has seeped all of the oil that has been obtained in the past. Half Moon Bay is represented to have the highest gravity in the world, but the production so far secured has been extremely limited.

The High Gravity people state that the field would have been developed many months ago, had it not been for the San Francisco fire and panic, which succeeded that event. These two circumstances combined were very disastrous to all concerned in the operations in the Half Moon Bay district and also prevented the completion of the Ocean Shore railroad between San Francisco and Santa Cruz. The development of this field largely depended upon the building of this road.

THAT OVERPRODUCTION COMEDY.

It seems almost a shame for the Oil Record to refer to the change in sentiment regarding the overproduction of oil, which only a few months ago was referred to as a menace to the oil industry. We ridiculed the idea then and incurred the displeasure of several very estimable gentlemen who were unwittingly, it seems, lending themselves and their influence to the Associated and Standard in a well-devised plan to hoodwink the oil producers of the state and get them stampeded into the net which had been so cunningly set for them.

We never shall forget the meeting held in Webb's hall in this city when the Independent Agency voted as a unit to suspend all drilling operations because the Associated Oil had told them there was an alarming overproduction of oil. At that same meeting there was introduced a resolution condemning the Oil Record for its audacity in claiming there was no overproduction when the Associated Oil and the Agency officials said there was. The resolution was not pressed to a vote for the reason that it was considered irrelevant to the subject then before the meeting. But to further show the animus that was back of it they had the resolution printed in full in a certain newspaper in Bakersfield which at that time was doing the bidding of the Agency officials. But the order of suspension, what became of that? Candidly, it is a shame to refer to it. And the Associated Oil, where are the defenders who that day so eloquently and with tears in their eyes proclaimed its virtues. Well, that's a joke too. We know we shouldn't refer to such tender subjects.

How would a motion to suspend drilling operations be received by an Agency meeting now?

How would an apologist for the Associated Oil be received by an Agency meeting now?

How many Agency officials are willing to go on record today in declaring an overproduction of oil, sufficient to menace the industry?

How many of them would sneer at John F. Baker today if he told them, as he did that day in Webb's hall, that there is plenty of capital available to move the Agency oil outside of the Associated Oil company's coffers?

Instead of the disaster which was prophesied there has come greater activity and greater prosperity to the oil industry than ever.

To the credit of the Agency officials be it said they soon discovered that they were being monkeyed with by the Associated and they would not stand for it. They turned to the Union and found in that company a friend and an ally. The coalition formed by the two interests was one of the wisest things ever accomplished by the oil producers of the state. It was not a new idea. The Union had offered the producers of Coalinga the same proposition eight years ago and they turned it down. The Union Oil had its plans all made and perfected for building a pipe line from Coalinga to the coast then and the contract they offered the producers then was almost identical with the one signed up now.

But the Standard came in just then and secured several large contracts in the east end of the field and the producers gave the Union the shake.

The Union purchased the ground where the Shawmut is for a station. When the producers threw them down they sold the land to John Bunting and temporaily withdrew from the field.

But the Union Oil has always played fair with the oil producers of the state and is their best friend today. It is time that men who are in the oil business for profit would find out their friends and stay with them.

It is time they were closing their ears to the cry of disaster which every now and then emanates from the office of the Associated and Standard. If any weak-kneed producer wants to sell his oil to the Standard for 40 cents, let him do it. If any to the Associated for 50 cents let him do it.

The fools are not all in the asylum yet. Some are in the oil business.

But the man who takes note of his bearings will not be found having conniption fits because the Associated Oil has said there was an overproduction of oil.

EXCHANGE BUSINESS IN LOS ANGELES.

Manager Louis F. Parsons of the Los Angeles Stock exchange has issued a report covering business for the first nine months of the present year. It shows that 4,705,853 shares changed hands, the same having a transaction value of $4,370,770. This exchange is distinctly a Los Angeles institution and deals in a variety of securities, bank stocks, utility stocks and bonds, and mining and oil issues. It is stated by Mr. Parsons that the total gain in prices made by all classes of securities, outside of the mines list, from September, 1908, to September, 1909, was $36,616,870. Referring to one department in which readers of The California Derrick are doubtless interested, Mr. Parsons says:

"Among the oil stocks, to enumerate the gains in detail would require much space, and I will, therefore, only call attention to a few of the most notable ones. Central Oil a year ago was around $0.90, today it is $1.30 bid; Fullerton Oil was selling at or about $0.50 a year ago; it has sold at $2.25 a share in the last 30 days; Olinda Land shows a gain of 10 points, Union Oil and its affiliated companies about 25 points each; Rice Ranch gained 20 points. And, as I said before, there is no stock on this list but that shows a handsome profit to the investors. The total gain in listed oil stocks from September 30th, 1908, to September 30th, 1909, is $29,600,000; $14,500,000 is the gain made by new issues, or, rather, new listings during the past year; $15,100,000 is the gain made by stocks which were listed and quoted a year ago at this time."

PLUTO GETS LIGHT OIL LIKE CONSOLIDATED.

At a depth between 900 and 950 feet, the Pluto is said to have gotten light oil of almost the same gravity as that obtained by the Devil's Den Consolidated. Not many of the particulars have been obtained, but it is believed that the company does not expect to get a well of this fluid. The oil was found in the shale and is not from a sand streak. There was considerable gas at the same time, but it apparently was not pocketed for according to the reports, there was not much of a disturbance, at least nothing like that experienced in the Devil's Den Consolidated well.

Drilling is still in progress and at last reports the hole was down about 1000 feet or more with 12 1-2-inch casing.

This is the second stratum of oil passed through in the drilling of the Pluto well. The first was in the vicinity of 400 feet and was of a heavy asphaltum character.

The Etzenhouser Oil Company has begun operations by sending out material to build a derrick and rig on its property in the Devil's Den district.

MILLIONAIRE BUT DID NOT KNOW IT.

In reference to the story in last week's issue of the California Oil World, relating to R. K. Howk's hard luck in going broke within a couple of hundred feet of the Shamrock's great well, at McKittrick, which has yielded a total of nearly two and a half million barrels of oil to date, a pioneer of this field asserts that the Howk company actually owned the Shamrock.

The Shamrock well, he declares, stands on the lease upon which Mr. Howk was drilling. No one knew that at the time and the fact was not discovered for years later. The Asso-

ciation owns both leases now, and has owned them for a long period.

Subsequent to its purchase of these two properties an elaborate survey was made through the district and it was found that the corrected lines actually placed the Shamrock on tbe Howk lease. Thus Mr. Howk was a millionaire and did not know it, but left the field after having exhausted every resource he had in the attempt to get oil.—Oil World.

GRAHAM & LOFTUS GET A NEW WELL.

Graham & Loftus have just completed their No. 3 on their 320 acre tract some distance south of the Fullerton property, and it is showing good for 300 barrels a day. The territory here is about 2200-foot stuff.

OIL WITH PARAFFINE BASE.

Oil with a paraffine base is reported to have been found in paying quantities in the Livermore district, about sixty miles east of San Francisco. Samples of this oil have been tested, showing no trace of asphalt. This is something new for California, and there has been much doubt on the part of most people that paraffine oil existed. It is to be hoped that further development will prove up a large quantity of this kind of oil, as it is seriously needed in the west by refiners, and brings a high price.

SEPTEMBER PRODUCTION.

The production for September, according to reliable estimates, approximates 5,000,000. The figures as given below are assumed to be approximately correct:

Coalinga	1,300,000
Kern River	1,200,000
McKittrick	420,000
Midway	185,000
Sunset	215,000
Santa Maria-Lompoc	695,000
Arroyo Grande	4,000
Watsonville-Sargent	7,250
Salt Lake-Sherman	280,000
Los Angeles City	44,500
Fullerton-Brea Canyon	340,000
Puente	3,000
Whittier	90,000
Newhall-Ventura County	41,200
Summerland	6,000
Total	4,829,950

The fact that September has but thirty days to August's thirty-one, accounts for the decline of 24,750 barrels. August's daily average was 155,958 barrels, September's 160,332, a gain of 4000 daily, due to the improvement of the American Petroleum in Coalinga by the use of air-compressors, the operation of the Central's big well at Whittier and the Murphy No. 2 in the Coyotes, more activity in pumping at Fullerton and a larger outpnt for the Palmer and Newlove at Santa Maria.

NOTES.

The independent oil operators of Texas offer to raise $750,000 for the construction of an eight-inch oil pipe line from the Oklahoma oil fields to the Gulf in connection with the movement in Oklahoma to have that State build the line.

There is great complaint among independent oil producers in the Oklahoma oil field that they cannot secure more than 35 cents a barrel for crude oil of 30-32 gravity test. In the Spindletop district in Texas, for crude oil testing only 22-24, producers are getting 70 cents per barrel; in Illinois, 68 cents; in Pennsylvania, $1.53.

Philip Griffith, an independent oil operator, recently completed the deepest hole ever drilled in the Florence, Colo., field. When the tools were pulled and measurements taken it was discovered that the well had reached a depth of 4,017 feet. There are several wells in the Florence field that have been drilled to a depth of from 3,600 to 3,800 feet.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for THE CALIFORNIA DERRICK, by J. M. Nesbit, Patent Attorney, Pafk Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each.

Oil-well derrick. T. A. Neill, Mannington, W. Va., 933,386.

Apparatus for recovering light oils from natural gas. J. L. Gray, Elizabeth, N. J., 933,976.

Reversing Mechanism. V. H. Palm, Butler, P., 934,343.

Pump-rod-pulling device. J. C. Martin, Findlay, Ohio, 935,-.764.

Jar for well-drills. H. B. King, Hartford, Conn., 935,914.

NEW INCORPORATIONS.

Los Vaqueros Oil Co., San Francisco; capital stock, 500,000 shares; incorporated by H. B. Leigh, A. C. Smith, F. L. McLellan, F. A. Taylor and William Bemenderfer.

East Oakland Oil Company, Oakland, Cal.; capital stock, 10,000 shares; incorporated by F. H. Senlich, Louis Allgewahr, W. T. Heider, H. S. Knapp and G. L. Warnken.

Acme Oil Co., Los Angeles; incorporated by H. W. Zeiger, A. M. Arnoz and G. B. Smith; capital stock, 10,000 shares.

Midway Kern Petroleum Co., Bakersfield; capital stock, 200,000 shares; incorporated by W. H. Cooley, C. H. Burdick, E. W. Orr, G. P. Louthain and G. R. Gibson.

Lauretta Oil Co., Visalia; capital stock, 10,000 shares; incorporated by A. Levis, J. R. Coats, J. S. McPhail, Alta Grant of Visalia, and H. J. Knight of Lemoore.

Ethel D Oil Co., Fresno; capital stock, 1,000,000 shares; incorporated by M. J. Laymance, Oakland; C. J. Barry, Los Angeles; C. H. Fairchild, Bakersfield; D. S. Ewing, Fresno; F. E. Shaver, San Francisco.

First Edison Well Co., Bakersfield; capital stock, 578 sbares, $50 par value; incorpoarted by J. J. Arnott, Bakersfield; C. E. Mawby, Edison; W. W. Worden, Oakland, and C. A. Jobnson, J. S. Hinton, San Francisco.

Acre Oil Co., Los Angeles, Cal.; capital stock, $10,000; by H. W. Zeiger, A. N. Arnaz and G. B. Smith.

Alvarado Oil Co., Bakersfield, Cal.; by C. L. Bullard, A., M. F. and V. C. McCullougb, J. V. and L. H. Mitchell.

Pyramid Oil Co., San Francisco, Cal.; capital stock, $1,-000,000; by G. S. Johnson, F. G. Cox, R. K. Hawk, C. J. Bowler and J. B. Cottle, Ventura county.

High Gravity United Oil Co., San Francisco, Cal.; capital stock, $2,000,000; by J. S. Osborne, W. Backus, H. R. Wade, J. E. Kerr and A. M. Tridell, Half Moon Bay.

Lemoore Oil Co., Hanford, Cal.; capital stock, $300,000; by H. W. Byron, Oscar Odale, Stiles McLaughlin, A. L. McKay, L. H. Byron, A. and J. H. McGlashan.

Colt Oil Mining Co.; capital stock, $200,000, subscribed $102,000; by C. W. Barrett, W. H. Reyburn, W. H. Thompson, Alvah Clow and J. J. Smith.

UNION WELL SUPPLY EXTENDS BUSINESS.

The Union Well Supply Company of Los Angeles, with branches in several fields, has entered the Coalinga field and is building a commodious warehouse. This company furnished the pipe for the Producers' Transportation Company, nearly 250 miles of it.

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JUST A LITTLE PLEASANTRY.

The Standard Oil company's offer of forty cents for crude was an apparent bit of pleasantry on the part of that company, and it was evidently not intended to be taken seriously. At any rate the Standard is reported as having made contracts since the announcement at fifty cents, and even as high as sixty cents. No producer should forget that the Standard and Associated are both badly in need of oil, and they should be compelled to pay the highest possible price for it. These companies have certainly gone the limit in the past to force the price down, and a little retaliation is now in order. It is barely possible that both companies will have to enter the office of the Union and ask the price of oil before the thing is over. Think of it. The Standard buying of a competitor.

But, who pays the difference in the price at which the Standard wants to buy oil, and the price the Standard will have to pay for it? That is an easy question to answer. The eastern producer of course. Another cut of from five to eight cents per barrel has just been made in eastern prices on oil that is scarce, making about twenty-five cents per barrel decrease this year. But eastern producers are at the mercy while California producers do a little dictating of their own.

It is reported that the Standard is buying control of a number of large producing companies. The report is denied. To be sure the Standard is not doing the business in its own name, but it apparently is laying low. Time will tell who is buying these big properties.

THAT OVERPRODUCTION.

Eastern papers, unacquainted with the California situation, are predicting dire things for California oil on account of the overproduction in this state. So far this great menace has not materialized, as the hopes of some of the big marketing companies have thought it would. The exact contrary has happened and will happen. The price of oil is not down. The average this year will be higher than it was last year and next year it will be higher than this year. It is believed that instead of a menace, this surplus is a godsend, as it is thought that a place has been found for every barrel of oil now above ground and every barrel that can possibly be produced in 1910.

At any rate the rush of the three big marketing companies to build pipe-lines is indicative of the future. Both the Standard and Associated have been forced to add to their transportation facilities to handle the oil, they have been forced by the action of the producers and the Union combined in the Producer's Transportation company to protect their own interests. Otherwise they would let the oil rot in the ground before they would take it until they controlled the situation. Past experience along these lines is having its effect in present action.

AN EXAMPLE.

In Illinois Crude oil stock is an example of what will occur when the public has fully awakened to its great opportunity for investment in California oil stocks. This stock has advanced from 25 to 50 cents per share in less than sixty days, simply because the attention of the public was called to opportunity. It is a regular dividend payer and this year will have paid 16 cents per share or over 30 per cent on the present selling price of the stock. This company has already paid dividends of $7,800 an acre, and yet one will find fossils saying that oil ground is worth only $2,000 an acre. We thought this idea had been exploded until we saw it in print in the columns of one of our contemporaries. Numerous instances of late could be cited where many thousands of dollars an acre has been paid for only partially developed ground. As a matter of fact, oil ground is worth little or much, according to physical conditions. Some oil ground is worth $500 an acre, and other ground is worth $10,000 an acre. No average price can be set as each tract is to be judged by itself and immediately surrounding property. Wake up pretentious oil wiseacres and live in the century of progress, and not in the days forever past, when such a thing as oil land was practically unknown.

WILL WELLS GIVE OUT?

The wells of the State of California are long-lived, but naturally the time will come sometime when the oil will be exhausted. There are mighty few abandoned wells in the state today. Many that were abandoned have been again placed on a producing basis. Many more will be put on the pump. In the Kern river field, it was thought that the production would show a material decrease from year to year, but the decrease has thus far been but slight. New wells almost invariably are bigger at the start than at any time thereafter, but they usually settle down to a steady basis and produce for many years. Hundreds of wells in the Kern river field that have been producing for eight or ten years, will produce for eight or ten years more, and, in all probability, for many years more than ten. The exhaustion is slight in proportion to the known existing bodies of oil in this and in other California fields. No one need hesitate to bank upon increasing prosperity in every field of the state for the next ten or twenty years and even though there is a decrease the advance in price will more than make up the value. The oil fields of California are in for a long siege of prosperity.

GOVERNMENT INVESTIGATING.

Government officials are making investigations as to the cause of the low price of oil in Oklahoma. It appears that the general opinion is to the effect that there is a combination between the pipe-line companies and between these companies and the railroads to depress prices. Oil men expressed a different opinion believing that there was more oil than could be handled and stating that further transportation facilities were needed. There is probably considerable truth in both contentions. Oklahoma oil men appear to be as yet somewhat in the dark and lack initiative in solving the problem. The solution lies within themselves for they are stronger than they think they are. California has set them an example of consolidation and co-operation. Eastern oil men have been so long in the mailed fist of the Standard that they do not know how to jump out. California oil men just jumped and the fist immediately loosened its grasp. It is not so tight as outward appearances would indicate. Fear is what keeps eastern oil men from acting in their own behalf.

OIL EXPORTS INCREASE.

Mineral oil was one of the few products of the United States which showed an increase in its exports during the year ending June 30 last, the year being one of declining exports in our trade as a whole, according to a report just issued by the bureau of statistics. The increase in mineral oil exported during the year was over 100,000,000 gallons, with an increase in value of nearly $2,000,000. Since the product began to be an article of export about a half century ago, more than $2,000,000,000 worth of the oil has been exported.

The production of the oil in the United States has increased eightfold since 1879. In 1875 the entire production of the United States was 2,400,000 barrels, less than that of the State of Texas for 1908.

Mineral oil exported during the last fiscal year was about double those of a decade earlier and treble those of 1880. Prices prevailing in 1909, however, were materially less than those of earlier years. The value of the exports has increased 195 per cent since 1880, but the gain in quantity has been 268 per cent. "Illuminating" oil showed an increase in export of about 50 per cent during the 10-year period just ended.

RUSSIAN WELL CREDITED WITH OVER 1,000,000 BARRELS IN FIVE DAYS.

News has reached us from Tcheleken, one of the oil-bearing islands of the Caspian Sea, that a well, 14-in. in diameter and drilled to a depth of 560 feet, has yielded 5,000,000 poods of oil in five days. The oil shot up to a height of more than 210 feet.

The island, well known to the oil men of the Baku region, is about 60 versts across. Along what is known as the Charken plateau numerous layers of sand and clay are soaked with petroleum. There are many hand-dugs on the island, and Nobel Bros. were amongst the first to drill fountains. One of the wells of this concern caught fire and burned for a week 2,500,000 poods of oil being consumed. It was not lost, as it afterwards gave as much as 40,000 poods of oil a day.

The crude is of good quality; it is light, gives a high percentage of illuminating oil, and contains some six per cent of parrafin. The island possesses ozokerit deposits. These are owned by Prince Lubomirski and Count Zamsyski.

A later report states that the well is on the Kara Kush plot. How much oil the spouter has thrown up has not been ascertained. Large quantities ran out into the sea, while more than 5,000,000 poods were collected in the reservoirs. The column of oil reached a height of 210 feet and was seen from Krasnovodsk. The well which produced this spouter started drilling in April, this year, and had reached a depth of 560 feet, when oil was struck. The spouter, which has made a great impression in petroleum circles, definitely settles the question of the importance of Tcheleken. Many persons from Baku have visited the island.—Petroleum World.

LOWER PRICE OF OIL.

Close observers could not have been surprised by the announcement on Thursday of another reduction in the price of oil. The evidence open to all in this country has been the steady accumulation of stocks in all fields. This has been less pronounced the last month, simply because the pipe lines of the Mid-Continent and Illinois have ceased building so much tankage. There is surplus production in both sections that would fill many tanks if taken for that purpose. In California there has been increase in the stocks above ground and wells have been shut in because the existing lines have been unable to care for it. (But the price of California oil is going up instead of down, with production increasing.—Ed.)

Abroad there has been another train of symptoms. Over production and demoralization have characterized the Gallician field. The Austrian government has undertaken relief measures, principally in the form of providing storage for the surplus, but including some assistance in stimulating the export trade. The German government has favored the Gallician exporters as against their American competitors and the result has been the loss of some American trade in that quarter. There have been large additions to the production in Roumania, the summer having witnessed the completion of some of the most sensational wells in petroleum history. This field is located very favorably for export to European ports.

Burma, another of the ancient petroleum fields, has joined the procession with a large increase in its production. During the present season the Burma Oil Company has completed at least one well that started at 7,000 barrels and another close to 5,000 barrels a day. The consular report reprinted in The Derrick some time ago showed the increase in sales of the Burma oil. But there is no use in enumerating further. In brief, there has been increase in oil production everywhere, even to the discovery of a new field in Egypt. And the American export trade has been shifting toward the Gulf of Mexico and Pacific ports. All of these things are significant of changing conditions.

Meantime the American exporters have been busy hunting and creating new markets for their product. American exporters in this sense means practically the Standard Oil Company. This company has been the pioneer in every region where oil has found a market. Others have been content to follow the cheaper method of entering the markets after they have been developed. And the most striking triumph of the past few years has been the enlargement of the market for petroleum in China. This has been accomplished at the expense of infinite pains and great outlay of money. Chinese methods and conditions have been studied with the utmost care and catered to in every particular. The result appears in the official statistics of American exports, accessible to every citizen.

It may be said in this connection that this Chinese trade has prevented a much larger accumulation of surplus stocks than there has been. It has taken thousands of barrels of oil that otherwise would have found no market. Other companies, domestic and foreign, have been content to contest for the old congested markets by cutting the price of the commodity. Inevitably this, coupled with increasing surplus production, has led to lower prices for crude. It is purely in the way of business, although in strong contrast to the general advance in prices of necessities.—Derrick.

HAMMOND PLANT TO USE OIL.

Crude petroleum will soon be used exclusively for fuel at the Hammond packing plant at St. Joseph, Mo. Workmen have commenced to build the foundations for two large tanks with a capacity of 75,000 gallons. They will be erected in the rear of the plant near the boiler rooms. The order for the pumps and burners has been sent to the factory, and it is expected to have them ready for use by October 15. S. L. Dillon, superintendent of the plant, said that it would be a great improvement over burning coal, which the company has had to resort to since the gas supply has been shut off.

TWO COALINGA DAILIES.

That the Coalinga oil field is entering upon an era of great prosperity is evidenced by the two new dailies that have just been started. We are in receipt of volume 1, number 1, of the Daily Oil Record, and it is certainly a credit to Coalinga. Editor Thomas will undoubtedly make a great success of the undertaking, judging by the improvement in the Weekly Record since he took it over less than a year ago.

Reported by
Special Field Representatives
of tbe
California Derrick

COALINGA.

The success of the gusher on the Silver Tip property has been so pronounced that the directors of the company have declared a 10 per cent dividend on 75,000 shares of stock, payable on the 31st of this month, according to advices which have been received from Coalinga.

The gusher to date has produced over 50,000 barrels of oil, which the company is given credit for, is well under control and is regularly producing 2,500 barrels a day.

The Silver Tip Company not only owns all the property upon which the well is located, twenty acres, but it has paid off its bills, the one for the well being $27,000, has issued all its stock and now has $25,000 in the treasury. As long as the present production continues, it is announced that a 10 per cent dividend will be paid every month.

During the month of September the Silver Tip sold about 34,000 barrels, 15,000 of which went to the Producers' Transportation storage tanks and 19,000 to the Associated Oil Company.

No. 2 of the California Oil and Gas Company, section 6-21-15, came in last week, showing up with the average wells on this "famous section 6." The well is making a good 500 barrels per day production.

The Bohemian Oil Company, section 22-21-15, is 1070 feet deep with 12½-inch casing.

The Golden Crest Oil Company, section 12-22-15, is 2540 feet deep with 6⅝-inch casing. The present sand appears to be an oil sand, at 2,600 feet.

The Amy is being finished up and will be producing next week.

The Pacific States Petroleum company is rigging up its first well.

The Coalinga Crystal will be ready to spud in the middle of next week.

The rig irons have been taken out to the site of the Coalinga Crystal's No. 1 rig.

Nos. 1, 2 and 3, of the American Petroleum on section 30 have been spudded in.

The lumber is on the ground and the cellar has been dug for No. 2 of the Silver Tip.

The Great Western is making fine progress. The well is 735 feet deep with 12 1-2 inch casing.

The water well on the Robertson has been spudded in, but not much progress has been made.

The Coalinga National has 820 feet of the 15-inch casing in and continues to make excellent progress.

The Azores is down a little more than 2500 feet with the 10-inch casing, and is now putting in the heavy 8 1-4-inch.

Zed Phelps says that the Blue Moon will be finished by the end of next week. The hole is being drilled through the oil sand.

Lumber is being hauled out to the Coalinga Gem property. The lines of the Coalinga South Pole are being run today and lumber will be hauled out next week.

No. 5 of the P. M. D. and O. has been landed in a sticky blue clay and the cementing off process did not have to be resorted to. No. 6 of this company continues to give a fine production.

The Coalinga Consolidated is down 150 feet with 16-inch stove pipe. The lighter 15 1-2-inch screw pipe was first put in, but it could not stand the hammering put to it. Fine progress is being made with the big stove pipe.

No. 6 of the New York Coalinga has been started pumping, and it gives promise of being a good heavy producer. Work will start on the rig for No. 7 next week.

The Coalinga Metropolis Oil company of San Francisco, has incorporated with $100,000 authorized stock in 100,000 shares and $5,000 subscribed in $1,000 lots by the following named as directors: Charles G. Wilcox, of Oakland, T. B. Henderson, A. L. Meyerstein, F. N. Fish, of the Metropolitan Trust and Savings Bank, and N. B. Campbell of San Francisco.

This is the company that bought the forty acres in section 26, 19-15 from the Porter Oil company some time ago.

At a meeting of the directors of the Two Step Oil company Tuesday afternoon, steps were taken which will undoubtedly result in the absorption of that company by the Walker Oil company. J. A. Hannah, the Visalia attorney, was present and advanced the proposition of the Walker Oil company, which was favorably received by the directors. A meeting of the stockholders has been called for November 10, and in the meantime the organization of the Walker Oil company will be effected.

The plan proposed by Mr. Hannah is for the Walker Oil company to take over the land of the Two Step Oil company, consisting of nice pieces of sections 17 and 29 in 25-19, in the Devil's Den. In consideration, stock in the Walker Oil company will be paid at the ratio of 2 to 1. The Walker has a standard rig on the way to the Devil's Den, and if the deal is successfully consummated, the development of the Two Step property will be begun at once.

The Two Step is a close corporation, capitalized for $72,000, add the stock of which has been issued. The Walker Oil company will be incorporated for $300,000.

COALINGA GUSHER LIST.

It is interesting to note, at this time, the gushers that have come in in this field.

The original Blue Goose (Home No. 3), on section 20-19-15, was a wonder in 1897.

The Independence had a gusher on section 28-19-15, which made a good showing for a short period in March, 1904.

In 1905, the California Oilfields No. 23, on section 27-19-15, was a wonderful well. The blowout caught the perforator in the hole, preventing the finishing of the well, but later the well was got under control and is now making about 600 barrels per day.

The next big well was Bill Kerr's, on section 34-19-15, the Missouri Coalinga. In the summer of 1905 it came forth a gusher in fact, and was variously estimated at from 10,000 to 18,000 barrels per day. She shot herself to pieces.

Section Seven Oil company, well No. 1, section 7-20-15, was brought in by Art Anderson in the fall of 1904, making over 4,000 barrels per day. It was got under control and has made over 1,200,000 barrels of oil and is still producing.

In February, 1905, well No. 1 of the P. M. D. & O., on section 12-20-14, was brought in, making over 100 barrels per hour for ten days. Art Anderson soon got this well under control. She has made over 770,000 barrels of oil and is still producing.

The next great spectacular well was the Guthrey, No. 1,

brought in by H. B. Guthrey, on section 31-19-15, in the spring of 1905. This well made over 7000 barrels per day for the first few flows. The gas pressure was terrific. With the oil and sand coming like a great sand blast, she cut out all connections and soon killed herself.

The last, to date, and the greatest of them all, was the Silver Tip, on section 6-21-15, brought in by Z. L. Phelps, in September, 1909, and now under control, making about 4,000 barrels per day. The first blowouts made from 8,000 to 20,000 per day.

INTEREST IN COALINGA MOHAWK REGION.

There is beginning to be a great deal of interest being taken in the land on the flat in the vicinity of the Coalinga Mohawk and Southeastern properties. Well defined rumors are afloat that big companies, notably the Standard and the California Oil-fields Limited, are watching developments in this territory with more than passing interest. During the summer, an option was given on the Coalinga Mohawk property, but it was later announced that the deal then pending fell through. Now it is rumored there is another movement for the purchase of that property, as well as others nearby, which are regarded as being promising prospective oil holdings.

The Coalinga Mohawk is installing a new boiler preparatory to resuming drilling operations. The tubing is to be pulled, the water cemented and the hole drilled into a deeper sand.

Fine progress is being made on the Southeastern property. Drilling is being done with a Johnson rotary which is meeting with excellent results. The hole is now 2310 feet deep and is said to be in perfect condition. The company landed its string of 12 1-2-inch casing at 1874 feet, which is a record breaking performance. The hole is now being sunk with the 12-inch bit and the 10-inch casing will be carried to the 3000 foot mark if everything goes right. The territory is well adapted to rotary drilling.

SUNSET—MIDWAY—M'KITTRICK.

At McKittrick the Madison Oil Company has its well No. 2 down something over 500 feet and expects to have it completed within the next two weeks. The first well is pumping regularly. The company has let contracts for two more wells, which are expected to be finished within the next two or three months. The depth at which oil is expected is between 800 and 900 feet.

The San Francisco and McKittrick is reported to have given an option on the property for a sum in excess of the present selling price of the stock which is better than $25 a share. A couple of years ago the stock could be bought for $2.50 a share and it is paying regular dividends now of $3.60 a year besides additional dividends.

The Associated Oil Company expects within the next few months to have its new pipe-lines from Coalinga to McKittrick. It has not been decided, according to Secretary Scribner, whether or not it will be extended to Midway.

In the Templor district to the north of McKittrick the Templor Ranch Company has completed its ninth well, and is going ahead with the drilling of four others. The independent pipe-line will probably be completed by the first of December, when the company will be able to market its oil which will probably amount to better than 600 barrels daily, although the wells are only about 300 feet in depth.

The Kimble well on section 33, 29-21 is down 2200 feet in brown shale with promising indications for entering the oil stratum very soon.

J. C. Yancey is reported to have sold a quarter section of land in section 15, 31-22, Midway, for a consideration of $25,000. The property is said to have been secured about four months ago for something like $1,000, including the cost of a rig.

The Santa Fe Company is running twelve strongs of tools in the various holdings in Midway.

The first well on the Western Minerals property recently secured by Santa Fe railroad officials and associates has been started. This is on section 22, 11-23.

The gas well of the Honolulu company in the Buena Vista hills is to be made an oil well. The gas has been shut off and drilling is to be continued with a rotary rig which has just been installed. It is said that the gas pressure can easily be controlled by the use of a rotary.

The Monte Cristo has just brought in well No. 32 near the center of the lease on the northwest quarter of section 1 at Sunset.

Superintendent Ben Stroud of the St. Lawrence Oil Company has made a big strike of light oil on the southeast quarter of section 5-32-23. The depth at which the strike was made was 1760 feet. The drill has gone into fifty feet of the sand. This is a test well. A small well, the heavy oil found in this locality was cased off above.

The Midway Crude No. 2, which recently struck 24 degree gravity oil at 1800 feet has cased off with the 10-inch at that depth and is now putting in the 8-inch. The oil stands at 1100 feet in the hole, although the shell only has been passed through.

The Standard has offered the Mt. Diablo Company fifty cents a barrel for the latter's royalty oil from the Cresseus and Mascot leases, provided this royalty oil is combined with the runs of the leasing companies under their contract at fifty cents. This oil has been paid for recently at the rate of forty cents per barrel on daily runs.

It is ascertained that the Standard is very much chagrined over the fact that the Associated has secured the production of the Section 25 company. According to a representative of the Standard, that company fully expected to be able to obtain this production at forty cents, assuming it to be impossible that the oil could be disposed of elsewhere at a higher figure.

OREGON MIDWAY SOLD.

The Hale-McLeod Oil Company has purchased all that remained of the Oregon Midway's property in this field, consisting of the northwest quarter of section 8 and the southwest quarter of section 5-32-23. The amount paid all told was $75,000. There are two wells on this property, one finished and said to be doing better than 150 barrels a day. No. 2 is somewhat better than 1100 feet. Included in the sale are 320 acres in 24, and 320 acres in 34, all under lease no others.

The officers of the Hale-McLeod Company are ex-Congressman Nathan W. Hale, president; F. V. Gordon, vice-president; J. M. McLeod, secretary and general manager. Other directors are N. J. Batchelder and J. B. Penland, attorney-general of the State of Tennessee.

SANTA MARIA.

The Dome is preparing to put down wells No. 3 and 4 in the Cat Canyon. In the old field they are drilling No. 13 and have the rig set up for 14.

The Dome well No. 11 now supplies the gas for fuel on the wells in Cat Canyon under a pressure of 50 to 55 pounds. The Dome will also supply the Carpenteria and Pinal companies with gas in the new field.

The Pinal, on the Fleisher tract, is getting ready for well No. 1. The camp is now about ready.

The Rice Ranch is drilling well No. 7.

On the Wickenden Ranchita the Dome is down 1400 feet.

The Carpenteria company is about ready to start with No. 1. The well is located southeast of the Stendel.

The Squire No. 2, in the Huasna, a quarter of a mile north of No. 1, is down 1850 feet.

The Pinal is deepening No. 16 with the intention of ascertaining whether or not there is a third stratum of oil underneath the present field. Well No. 27 spudded in Friday.

The showing in the Brooks well has justified the Union in laying a pipe line to the well and contract for the product. This same line will also tap the Henderson for its oil. The Union will pump the product from these two wells to its two 35,000-barrel tanks.

CONSOLIDATION.

The Cleveland Oil Company of Kern River is about to increase its capitalization to $1,500,000 in order that it may absorb the France company, which owns eighty acres in the Midway field, and the California-Kern, which owns twenty-five acres and a refinery in this field. The Cleveland itself is now producing between 250 and 300 barrels a day, and the California-Kern is a considerable producer. The France company has its No. 1 drilling.

VENTURA COUNTY.

Canadian Queen Oil company operating in the Ojai Valley, has well No. 1 about 300 feet. The company stands an excellent chance to get a good well.

Midway Petroleum company is putting up a new rig on its property in the Sulphur Mountain district. Machinery is on the ground and drilling will begin within a few days. This is already a producing company.

Central Mining and Oil company is building derrick for No. 1, in the Pira district. The property was leased from the Pira Land company, and is considered good territory.

Ventura Coast Oil company is to pull the casing in No. 1, and put the same in shape, then finish up the well at its present depth. No. 2 will be begun within a short time.

No. 2 well of the Ojai Valley Petroleum company, which has been on the pump for the last month, is to be carried down to the deeper sand. The work will probably start about November 1st.

The Old Santa Paula Machine shop has been re-opened under the name of the Santa Paula Garage and Machine company. The shop has been overhauled and from now on expect to be able to make all necessary repairs on oil field tools and machinery. A line of fishing tools will also be carried for the accomodation of the unfortunate.

Six of the fourteen iron workers who will construct the big storage tank for the Bard Oil & Asphalt company, on Sulphur Mountain have arrived. The tank will have a capacity of 37,500 barrels.

The Ventura Oil Development company, operating near the Modela field in Sespe district, has established a comfortable permanent camp, the iron is on the ground and the hole will be spudded before Nov. 1st. The Liberty has put No. 1 on the pump and will start hauling material for No. 2 immediately.

How the Union is extending its refined oil trade is related by a Los Angeles oil man who recently returned from the East, coming through the Northwest. He says he saw the Union's tank stations and officers in towns way inland, in eastern Oregon and Washington and along the line of Idaho. In Portland and Seattle the Union's tank wagons are frequently seen on the streets.

The Union has oil in its first well in the Simi valley near Chatsworth Park at only 800 feet. The well appears to be a good one yielding a light petroleum. The location is ten miles from any other producing well, the nearest being in Torrey canyon, Ventura county. It is an entirely separate field.

Close to this, but far enough north to get the stratum only at greater depth the Scarab Oil company, composed of M. H. Whittier, Burton E. Green, F. B. Henderson and some other Amalgamated-Associated officials, is down some 700 feet. They do not expect results until between 2000 and 2500 feet.

SESPE CANYON.

The old No. 1 well of the Elk Consolidated Oil company, now the property of the White Star Oil company, has been producing at the rate of about 125 barrels per day since being deepened. The well was originally finished at something like 1,200 feet deep at which depth the production was not satisfactory. It was deepened to about 1,800 feet, being finished some two months ago and the production has been greatly increased. The other three old wells will be deepened also and the company will also drill new ones at once.

The Mutual Oil company has brought in its well over the crest of the hill southeast of the White Star and have a rig up on the Udall claim to the west.

The Stockholders Oil company has a crew of men working on their No. 1 well preparing to deepen the same to the deeper strata from which the White Star is producing. The well was drilled to the 1,200 foot mark something over a year ago but has never been completed, although light oil was encountered at this point. This company are some 200 feet deep in their first well on their Doe Flat property.

Mr. A. F. Johns, manager of the Big Sespe Oil company, recently filed a water power claim about one mile north of the location of the company's present operations. This water power right will be an asset of the company and it covers a minimum of 1000 miners inches which can be increased to about 2000 inches in the rainy season. It is figured that this power will enable the company to market $25,000 to $50,000 worth of electrical energy annually in addition to the amount it uses for light and power on its oil property. Aside from the necessary assessment work it is not likely that much money will be spent in the development of this power before next summer.

This company is now actively laying its 6-inch pipe line from the wells to Brownstone Siding and about 1000 feet have already been laid. When completed it will be between seven and eight miles in length. Material has been shipped in for a 2000 barrel steel storage tank to be erected in the field, and two other tanks are to be erected at the Brownstone terminus.—The Oil Industry.

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OIL OPERATIONS AT CALLEGUAS.

Doulton and Waller of Santa Barbara have leased the field and are about to begin development work on the old oil wells at Calleguas, near the Camarillo ranch. These wells were operated by the Union several years ago but were never very profitable. With the increased demand and advance in price of oil it is thought that they can now be operated at a profit.

LONOAK TO GO DEEPER.

At a recent meeting of the stockholders of the company held in Salinas it was decided to proceed with the work on Lonoak No. 2. The well will be drilled deeper.

WHAT OLD KERN RIVER IS DOING.

The oil field of Kern River contains approximately 12 square miles of proved territory. A large portion of the district has been almost completely drilled. For instance, section 33, controlled by the Imperial Oil Company and the 33 Oil Company, where about 200 wells have been drilled.

On the northwest side of section 3 the Kern Trading and Oil Company has an orchard of 135 derricks lined up.

Monte Cristo on section 5 and Peerless, adjoining, on section 31, have both proved crackerjack leases, but if indications mean anything they have pretty nearly covered the ground.

Linda Vista Oil Company on section 29-28-28 has been producing about nine years. There are eight wells on 17 1-3 acres. At one time three wells were producing 12,000 bbls. a month; now the eight are making 6,000 bbls. a month.

The Piedmont, adjoining the Linda Vista, containing 16 1-3 acres, has eight wells, with a production of 5,000 bbls. a month.

Sesnon, same section, 34¾ acres, has 14 wells, with a production of 24,000 bbls. a month.

The Sacramento, adjoining Sesnon, has 17 wells; monthly production, 15,000 bbls. Other companies operating on this section are Missouri, five wells; Vernon, nine wells; Columbian, on 20 acres, with 10 wells; all working on a declining production.

This gives a general idea of conditions along the lines where the field has been worked. Air compressors are being introduced. This method meets with favor by some and is condemned by others. It has increased in production very materially in many instances.

On section 13-28-27, on the northwest edge of the field, the Kern Star Oil Company has recently finished a new well which opened up with a blowout over a week ago. It is 1,200 feet and looks good.

The Sapphire Oil Company on section 24-28-27 has finished a well on the edge of the lease that will do about 50 bbls. a day.

On the northeast quarter of section 25-28-27, Fox & Garrett are drilling at 700 feet with good showing. The same company on the southeast quarter of the same section has com-

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pleted two wells, which have been put to pumping and are doing 35 bbls. each.

The Tejon Oil Company has just finished two wells on the east half of the northeast quarter of section 36-28-27. Good for 60 bbls. each.

Lackawanna Oil Company, southeast quarter of 30-28-28, has finished No. 6, which is making 75 bbls.

Lorenzo Oil Company has drilled in six wells since spring, which are averaging 60 bbls. each. These wells complete the development work on this lease, 30-28-27.

American Crude has finished No. 6 on section 29-28-28, northeast quarter. Doing 50 bbls. a day.

Eldorado Oil Company on the northeast quarter of section 29-28-28, has finished two wells which are good for 40 to 50 bbls. eaeh.

Stauffer Oil Company, northeast quarter of 28-28-28, has lately finished No. 2, which is making 40 bbls. No. 3 is about completed; rig up for No. 4, ready to drill.

Overland Oil Company, southeast quarter of 28-28-28, has rig on old water well and will drill for oil. There is an abundance of water on this lease, and plenty for all future developments. Well No. 6 of this company has been recently cleaned out and put to pumping, with increased produetion.

Thirty-three Oil Company has finished Nos. 60, 61 and 62. They are doing 40 bbls. eaeh. They are on section 33-38-28. This lease has shown good production.

Gray Oil Company, northwest quarter of 2section 2-29-28, drilled No. 1 deeper and has completed four others. They will average 30 bbls. each. Rig is up for No. 6 and will commence drilling at once. The company has installed a power and will pump all wells with this system.

Capital City Oil Company, northwest quarter of section 9-29-28, has finished its No. 1, which is doing 50 bbls. No. 2 is starting to drill.

Denver Oil Company has tbree wells completed on northeast quarter of 4-29-28, which are closing an average of 50 bbls. eaeh. No. 4 is drilling. Michigan Oil Company on adjoining property has recently finished three wells. Both these companies will keep up active developments.

The Cleveland Oil Company, northeast quarter of section 8-29-28 has lately finished four wells; average about 50 bbls. each. No. 5 rig up and ready to drill.

Broadway Oil Company on adjoining property is drilling No. 2. No. 1, drilled about seven years ago, has been cleaned out and materially benefited, doing 35 bbls.

The Vista Oil Company, northeast quarter 31-28-28, drilling No. 10 and 11, No. 12 rig and will start drilling soon.

Monte Cristo Oil Company on northwest quarter of 5-29-28, has lately installed a 1,000 ft. Ingersoll Rand Imperial, type No. 10, air compressor. This brings its power up to 1,900 feet. It is operating 12 wells on air and elaims production has been inereased 25 per cent.

Apollo Oil Company on section 4-29-28 has installed a 1,170 ft. Hall air compressor. It has four wells on air and will put four more on soon. It is giving good satisfaction.

Walker & Heck Oil Company on 30-28-28 has finished No. 9 and 10, which are good for 60 bbls. eaeh. Tbese wells finish the development work on this lease.

The West Shore Oil Company on 32-28-28 put in a 1,000 ft. Ingersoll Rand compressor. It has tbree wells on and will place another. These people claim that benefits have been received to the amount of 100 per cent, not only to them but to neighboring production sinee the installation of the air compressor.

Kern River Drillers, on 36-28-27, completed a well at 1250 ft., whieh is being perforated. A new boiler plant is being built.

The Olema Oil Company in section 19-28-28, at the extreme northern limits of the field, has recently been taken over by W. P. Twist, and Frank Smith bas taken charge of the lease. It has 40 acres, which will be drilled. There are three wells on tbe lease and one drilling. The company is now organized as the Poso Oil Company.

Tbe Santa Fe, on section 4-29-28, is drilling a deep test well in order to ascertain the formation, and whether lower sands exist. The old oil produeing sand was passed at 750 ft. Oil sands are obtained at 450 ft.

The Wagy and Dickson well on section 18-28-28 has been suspended owing to litigation. It was 1,550 feet deep.

Clampitt & Drysdale on 19-28-28 are perforating at a deptb of 1,090 feet.

The Melwood Petroleum Company has taken over a 40-acre lease in the southeast quarter of section 21-28-28, adjoining the 40 acres recently leased by Miller & Sarber. This is in extreme north end of the field, and is almost new territory, although three wells on the Miller & Sarber are producing 35 bbls. each. The Melwood will drill 10 wells, tbe contract for which has been signed with Miller & Sarber. Three strings of tools will be run.

The storage eapacity of this field is something enormous, some of the reservoirs covering over five acres of ground. The Standard Oil Company has 70 steel tanks of 35,000 eapacity each; six reservoirs of 350,000 bbls. each; six reservoirs of 500,000 bbls. each. The Union Oil Company has one reservoir of 350,000 bbls. capacity, besides several smaller tanks. The Associated Oil Company has one reservoir of nearly a million bbls. capacity, and five reservoirs of 350,000 bbls. each; Kerr Trading & Oil Company has a reservoir of 300,000 bbls. capacity; Monte Cristo two large reservoirs, capacity unknown. There are many steel tanks ranging from 1,000 to 55,000 bbls. The Independent Union is grading for two 55,000 bbl. tanks and will build a reservoir of 1,000,000 bbls. capacity.

BEGINNING PRELIMINARIES.

The Midfield Oil company, of Santa Maria, which recently obtained a lease in this field, is about ready to begin the preliminaries of development. This company is financed principally by Watsonville and Salinas people.

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DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES IN OCTOBER.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Oct. 15, '09	.03	11,400	$ 148,200
Amalgamated	Sept. 15, '09	1.00	50,000	1,300,000
American Pet.	Aug. 1, '09	1.47	147,852.52	450,711.50
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated	Mar. 20, '05	1.50	446,055	1,548,368.55
Bay City	Aug. 10, '09	.30	30,000	40,000
Brookshire	Oct. 1, '09	.30	5,000	427,500
Caribou	Oct. 15, '09	.25	20,175.75	599,652.99
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Claremont	Oct. 28, '09	.02	9,000	269,000
Coalinga Pac.	Oct. 25, '09	.10	6,500	100,750
Columbia	Oct. 25, '09	½c	4,996.31	234,826.39
Del Rey	May 15, '09	½c	3,927.50	11,782.50
Esperanza	Oct. 27, '09	.02	3,200	43,050
Euclid	Oct. 1, '09	.01	3,500	106,500
Four	Oct. 25, '09	.01	3,000	207,000
Globe	Oct. 1, '09	.01	6,000	75,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	Oct. 30, '09	.02	2,000	464,000
Homestake	Oct. 1, '09	.10	1,000	75,000
Illinois Crude	Oct. 1, '09	.01	2,000	78,000
Imperial	Oct. 6, '09	.60	60,000	1,880,000
Junction	June 1, '09	.01	2,500	20,000
Kern Oil	Sept. 13, '09	.20	20,000	20,000
Kern River	Feb. 3, '09	.10	2,000	98,000
Linda Vista	Sept. 6, '09	.01	3,838.50	61,416
Lucile	Sept. 12, '09	.10	2,670.44	37,386.16
Mexican Pet.	Oct. 1, '09	.01¼	84,740.32	3,050,912.80
Mecca	July 15, '09	.03	12,672	71,825
Monte Cristo	Oct. 15, '09	.03	15,000	340,000
Nevada Co.	Oct. 13, '08	.04	10,000	40,000
Palmer	Oct. 20, '09	.01	18,020.05	160,260.65
Peerless	Sept. 20, '09	.06	6,000	801,000
Piedmont	Aug. 16, '09	.01	3,890	22,987.30
Pinal	Oct. 31, '09	.10	15,000	834,841
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Record	Oct. 16, '09	.05	5,000	20,000
Reed Crude	July 25, '09	.05	5,000	1,112,200
Rice Ranch	Oct. 10, '09	.01	3,000	84,000
Royalty	Oct. 10, '09	.02	3,000	6,800
S.F. & McK	Oct. 4, '09	.50	25,000	265,000
Sauer Dough	Oct. 26, '09	.05	9,975	438,900
Sesnon	Oct. 27, '09	.15	15,000	45,000
Silver Tip	Oct. 31, '09	.10	7,500	7,500
Sovereign	Oct. 1, '09	.10	5,000	85,000
Sterling	Sept. 15, '09	.25	62,500	684,500
Superior	July 20, '09	.01	5,000	45,000
S. W. & B.	Oct. 20, '09	.01	3,770	45,240
Thirty-Three	Sept. 3, '09	.30	30,000	670,000
Traders	Oct. 15, '09	1.00	11,550	112,150
Union	Oct. 25, '09	.50	124,813	5,744,190.15
United Pet.	Oct. 25, '09	.50	40,375.50	1,977,082.43
Wabash	Oct. 16, '09	.01	3,000	105,000
West Coast	July 25, '09	2.00	20,816	41,632
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000
Total Dividends Paid to Date				$26,050,966.42
Total Dividends paid by the above Companies for October, 1909				539,915.93

RAMONA GAS.

Tests recently made on the gas of the Ramona Oil Company at Petaluma show it to be of the very best quality. Comparisons with other production are extremely favorable to Ramona and are shown as follows:

1000 cubic feet Ramona natural gas equals 1000 cubic feet of average Pennsylvania gas.

1000 cubic feet Ramona natural gas equals 880 cubic feet best Indiana gas (which is best natural gas in the United States).

1000 cubic feet Ramona natural gas equals 1360 cubic feet average coal gas.

1000 cubic feet Ramona natural gas equals 2200 cubic feet air and water gas.

1000 cubic feet Ramona natural gas equals 1-6 bbl. average California petroleum.

1000 cubic feet Ramona natural gas equals 1-7 barrel best California petroleum.

1000 cubic feet Ramona natural gas equals 61½ lbs. average coke.

1000 cubic feet of Ramona natural gas equals 1-20 cord of pine wood.

1000 cubic feet of Ramona natural gas equals 1-32 cord of oak wood.

1000 cubic feet of Ramona natural gas equals 88½ pounds average American lignite coal.

1000 cubic feet Ramona natural gas equals 63 pounds California bituminous coal.

The Bonita well is down over 1500 feet with a Parker rotary and is approaching the point where oil is expected. The Bonita has a lease on a portion of the Ramona's holdings.

California Oil

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We are glad to announce that Mr. C. F. Whittier, who has been identified with the California oil industry almost from the first discovery of fuel oil in the State, has associated himself with the Campbell Investment Company, and the firm will be known in the future as the Whittier-Campbell Investment Company. Mr. Whittier will look after and pass on all land and leases purchased by the company.

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Brookshire		1.25
Caribou		15.25
Chicago Crude	.08	
Claremont	2.05	
Dabney		.10
Eldorado	.10	
Ssperanza		2.00
Four	.28	
Fulton	.75	1.00
Graciosa		.40
Imperial		35.00
Kern	.60	
Lucile		15.00
Mecca		1.15
McKittrick	.09	
Monte Cristo	2.15	
Esperanza		2.00
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Palmer	1.20	1.25
Peerless	1.50	5.00
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Rico		297½
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Traders		90.00
Turner		.80
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Wolverine	.20	
W. K. Oil Co.	2.10	

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American Petroleum Co. (com.)	68.00	70.00
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Cleveland Oil Co.	25	.....
Columbia	1.15	1.20
Euclid Oil Co.	.50	.75
Fullerton Oil	2.10	2.50
Globe	.16	.21
Jade Oil Co.	.15	.17
Mexican Petroleum	.....	1.35
Mexican Petroleum Ltd. (pfd.)	64.50	65.75
Mexican Petroleum Ltd. (com.)	24.00	26.00
New Pennsylvania Petroleum Co.	.....	.80
Olinda Land Co. (Oil)	.....	.32½
Palmer Oil Co.	1.00	1.30
Perseus Oil Co.	.....	.35
Provident Midway Oil Co.	.....	.35
Reed Crude	.25¾	.....
Rice Ranch Oil Co.	.....	1.17
Trader's Oil Co.	104.00	.....
Union	103.50	104.37½
Union Provident Co.	101.00	102.50
United Petroleum	104.00	.....
West Coast Oil Com.	9.00	.....
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Oil exceeded gold in value last year by nearly $10,000,000. This year it will exceed gold by more than $12,000,000. The industry is just in its infancy, although it is 24 times greater than it was ten years ago.

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Associated with us are men of long experience in the oil business in California. With their aid we publish the **OIL BOOK**, chock-full of information of all the fields. It will be sent to you free upon request.

We advised Templar Ranch when it was ten cents. It is now 30 cents. We advised San Francisco and McKittrick when it was $13.00 per share. It is now $25.00. We advised the purchase of Monte Cristo when it was 95 cents. It is now $2.85. Then there was Lady Washington at 10 cents. It is now 50 cents.

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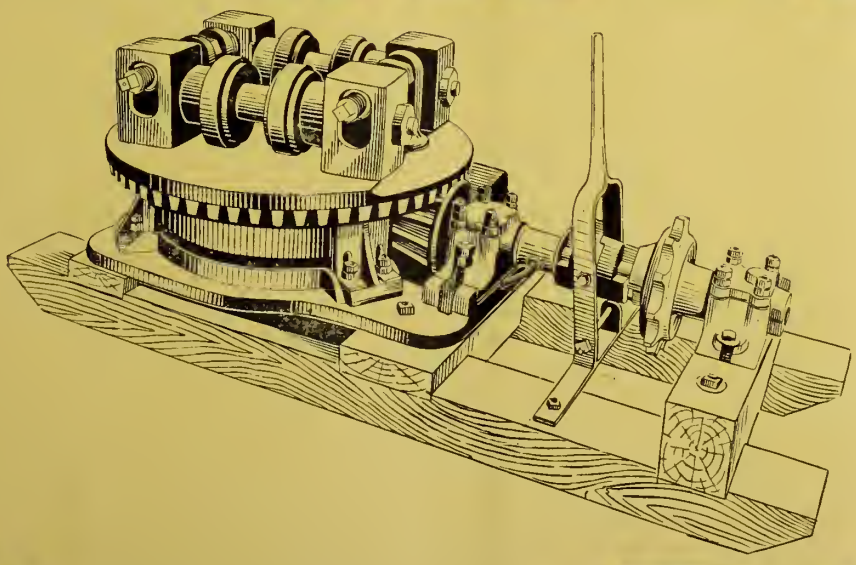
CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., November 1909 No. 7

PARKER



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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., November, 1909 No. 7

ADVICE TO FOLLOW

During his address to the visitors from Los Angeles at the banquet the other evening, T. A. O'Donnell had the following to say:

"There is too much of the feeling that the oil game is a game of chance, and too many people engage in the business with the same feeling. It is not a game of chance. It is a legitimate game, a game worthy of the attention and application of any citizen or business man in the State. We are not entertaining you in order to invite you to invest your capital in our oilfields. We do not need it. Our advice to you is, if you are contemplating investment do not put a dollar into the oil business unless you have made a thorough investigation of the proposition. Engage in the oil business as you would any other business. People say, 'Well, here's four or five hundred dollars to take a flyer in oil.' That's the wrong idea. If you have any money to invest in the oil business, give the business your personal attention. Treat it as you would any other line of business. The oil business is legitimate, but it cannot be expected to pay you unless you pay it your attention."

If the people who invest in oil would follow the advice contained in the above paragraph, there would be fewer attempts and fewer successes at fleecing the ignorant speculators throughout the country. As we have said before, the flagrant misrepresentations of unscruplous advertisers and promoters is doing much to shatter the confidence of investors. People have been "taken in" so many times in oil stock investments that they regard the oil business as a game of chance.

The oil business today is one of the most important in the State. It never has been on a more firm or substantial basis. Ask the bankers, ask the manufacturers, ask the oil men themselves.

Don't believe absurd things about 2500 barrel wells until you investigate for yourselves. Don't believe valuations of $19,000,000 on twenty-acre leases until you investigate for yourselves. These are the kind of pitfalls into which the ignorant investor falls. If he would investigate instead of accepting the wording of alluring advertisements as gospel truth, there would be less attempts at this kind of business and less of the feeling that the oil business is a game of chance.

If you want to invest in oil, come and look the oil business over. An investment of any kind, if worth anything at all, is worth the trouble to investigate. All promoters and all advertisers are not false, but in order to separate one from the other you must investigate.

To people who are seeking good oil investments, Coalinga is offering many opportunities. Legitimate oil stocks and legitimate oil propositions offer the most stable, the most reliable investment in the State today.—Coalinga Record.

MISREPRESENTATION.

"Blue Moon is flowing 2500 barrels a day." "This company will shortly declare a dividend." "This stock will sell for $100 per share."

The advertisement is vague as to whether stock is offered for sale or only that the advertisers wish the stockholders to hold their stock. If the latter it can be for but one purpose, and that is to enable some persons to unload their holdings without knocking down the price. At any rate, a flagrant misrepresentation is apparent at a glance to every one familiar with the affairs of the Blue Moon Oil Company. The stock at $100 per share would put a valuation of $19,000,000 on the twenty-year lease. While the well has the making of a good producer, it has not given 2500 barrels since the day it was brought in. It has flowed at that rate per day on several occasions, but is not yet on a producing basis. And as to divideuds, the directors have many matters more important than dividends that are occupying their attention. Dividends are furthest from their thoughts. It is this form of unscruplous advertising that disgusts every conscientious oil man. It is unjust and can do no one any good.—Oil Record.

A MAMMOTH OIL BURNING LOCOMOTIVE.

The largest locomotive ever built for passenger service has just been turned out of the Baldwin shops at Philadelphia for the Atchison, Topeka & Santa Fe railroad and will haul trains over the mountains in Southern California and Nevada. Engine and tender measure 105 feet over all and weigh, loaded, nearly 300 tons. The tank holds 12,000 gallons of water and 4000 gallons of petroleum, the engine being an oil-burner. It has five sets of drivers, 73 inches in diameter, three sets being coupled to the high-pressure cylinders and two sets to the low-pressure cylinders. It has a tractive power of 53,000 tons, as compared with 35,000 tons, which is the rating of the largest passenger engines heretofore built.

SAN JUAN OIL FIELD.

The San Juan oil field, of Utah, according to the geological report just filed by H. E. Peterson, expert mining engineer and mineralogist, who has just completed an examination of the southeastern Utah field, promises well. The report is as follows:

"The San Juan oil field covers a territory approximately fifty miles wide by ninety miles in length; its total area covering about 4,500 square miles, thus exceeding, in extent of territory, any known oil field in the world.

"The field begins at a point about twenty miles west of Bluff, thence extends westerly fifty miles along the San Juan river; thence sixty-five miles north and twenty-five miles south of said river, through the Navajo Indian reservation.

"The contour shows a series of undulating hills and eroded basins, with a number of low, precipitous bluffs. The San Juan river, with its great volume of water and swift current, has worn a deep channel, exposing to view seven distinct and intact anticlinal folds, and extraordinary as it may seem, no true synclinal depressions appear between the anticlines, the formation being intact along its original plane of bedding, the dip being only ninety feet to the mile.

"The formation consists of alternating layers of sandstone, fossiliferous limestone of great porosity, clay-shales and arenaceous shales, and is free from faults, fractures and fissures, with two exceptions, one exception being a faulting along the core or axis of the anticline, in the extreme western limits of the field; the second is an intrusion of a schistose mass, south of the river, penetrating a minute area without having caused any general or visible disturbance. The anticlines traverse the country from north to south, and even beyond the territory herein described indications of oil are found.

"Eight distinct oil-sands are found along the San Juan river, showing a thorough saturation and emitting strong odors of petroleum. These oil-sands aggregate over 300 feet in thickness. The character of the oil-bearing sand-rock and fossil-limestones shows considerable thickness and porosity, forming the most ideal storage rocks known, for so volatile a substance as petroleum.

"The geological age of the formation exposed ranges from the Cretaceous to the Jurassic, Triassic, Carboniferous, Permian and upper Devonian. On the high points the Cretaceous is mostly in evidence; in the basins, the Jurassic and Triassic form the chief exposures. Along the banks of the river, immediately adjoining the Goodrich basin, the Carboniferous is shown, and in the western portion of the field the Permian and upper Devonian appear, owing to the anticline being tilted to a more acute angle than the ones in the eastern part of the field.

"Present development centers in and around the Goodrich basin, where sixteen wells have been drilled to date without a single failure. These wells have only been drilled to the second, or Goodrich-sand, to a depth of from 220 to 300 feet. One well, at a depth of 220 feet, by actual test, pumped at the rate of 800 barrels per diem.

"The oil is a limpid fluid of 38-degree gravity, paraffine base, and burns readily without refining, the ignition being instantaneous on the application of a lighted match. The color of the oil, by transmitted light, is dark green. It contains a high percentage of the volatile oils and is the best refining oil found in the western part of the continent. It should be worth from $2.50 to $3 per barrel at the well. Specific gravity of the oil, 1.837.

"Two pipe lines and one railway have been surveyed into the field. The operators to date seem to have confined their attention to striking oil in the upper sands, so as to prove up their holdings at the minimum of cost and in the shortest space of time. Most of the companies are employing Star portable rigs, but a few are now ready to install heavy Standard rigs for the purpose of drilling to greater depth, in order to penetrate all of the known oil-sands in the field."

Section 7, No. 1, Coalinga.

SANTA MARIA.

The Western Union Company's well, No. 39, came in this week. This well is located a long distance to the south and east of the Western Union office and proves up considerable new territory. The well is a good one and the quality of the oil is fine. No. 38 of the same company, located near No. 39, is in oil sand and the company expects it will be a producer before long.

Dome No. 3, on the Blochman tract, was spudded in this week, and in No. 4 Dome, on the same tract, the drill is dropping, and everything going along nicely. No. 2 Dome, on the Blochman tract, is down about 1,900 feet and working fine.

The Carpinterio No. 1, located on the Fleisher tract, joining the Brooks on the east, is ready, and will spud in the forepart of next week.

$39,335,320 THE 1909 DIVIDENDS OF STANDARD OIL.

Proxies for the annual meeting of the Standard Oil Company, to be held at the company's offices in Bayonne, N. J., January 11, are being solicited in the names of John D. Rockefeller, Charles M. Pratt, Walter Jennings and H. C. Folger, Jr. It is expected that the meeting will be a formal affair. No action is to be taken in regard to capital reorganization. When the corporation has freed itself from litigation it is expected that the capital stock will be raised from $100,000,000 to $500,000,000 or $600,000,000.

The dividend of $10 a share for the fourth quarter, declared a few days ago by the Standard Oil directors, makes $39,335,320 that will be disbursed in the current year. The net profits of the Standard Oil Company from 1902 to 1909 inclusive aggregate over $593,000,000, and the surplus after dividends of $318,500,000, aggregates approximately $275,000,000.

Merrill Crude Lease of the Section Six Oil Co.

The following table shows the net profits and dividends of the Standard Oil Company from 1882 to 1909 inclusive, earnings for the same years 1907, 1908 and 1909 being estimated:

Year	Profits	Dividends
1909	*$80,000,000	$ 39,335,320
1908	*$80,000,000	39,335,320
1907	*$85,000,000	39,335,320
1906	83,133,251	39,335,320
1905	57,459,346	39,335,320
1904	61,670,110	35,188,266
1903	81,336,994	42,877,478
1902	64,613,363	43,851,956
Total	$ 593,202,064	$318,594,300
1882 to 1891 increase	456,240,000	351,883,000
Total	$1,049,442,064	$670,427,300

*Estimated.

The Standard Oil Company for the last five years has been paying to shareholders $40 a share each year. Its annual net profits have averaged close to $80,000,000.

CONSERVING RESOURCES.

It is very evident from the context of Secretary Ballinger's annual report that the Interior Department is wholly committed to the policy of conserving the national resources yet remaining unappropriated to private use, and that in line with this policy Congress will be advised to enact legislation which shall have for its immediate result the sale or leasing of oil lands to operating companies, which operating companies shall have their tenure of possession dependent upon actual use of the properties so assigned to them.

Further than that, it is reasonable to assume that the department will recommend the entire withholding of a certain portion of the oil lands of the nation for development by the government itself in an effort to provide a supply of fuel for naval vessels.

When Secretary Ballinger was in this city a few weeks ago, he was called upon by a well-known operator, residing in Los Angeles, but having large interests in located lands in that section of the Midway field, lying between the older portion and the region brought in by the Crandall and other operations of more recent date. This operator's whole fortune is bound up in the lands referred to and he was extremely anxious to secure from Mr. Ballinger a statement explanatory of the action in withdrawing a strip of territory on the east flank of the Mountain Diablo range of mountains under order dated September 27, 1909. The attempt to secure an explicit statement from Mr. Ballinger failed. That gentleman was evasive in his replies to questions, and he declined to commit himself positively on any point, but he did convey to the operator who had sought him out, the impression that he was emphatically in favor of any measure that might help to conserve and protect the public domain in order that wastefulness might be prevented and that the resources thereof might he preserved for future use.

FIGHT SUCCESSFUL.

President L. P. St. Clair of the Producers' agency announced at the banquet tendered the Sierra Madre Club that insofar as he was able to forecast the future, oil will bring to the producer the recompense to which he is entitled.

"The fight has been carried out to a successful issue," said Mr. St. Clair. "Hereafter, the dangers that have beset the paths of the producer will not be encountered. We stand on the threshold of a time, when the oil having been produced, it may go to the consumer under such circumstances as will enable both parties to the sale to profit by the transaction.

FIRST OIL
LADY WASHINGTON WELL No 2.
BENEDICT WELL No 1
Mc KITTRICK OIL DISTRICT
TYPICAL VIEWS OF PROPERTIES
OF THE YELLOWSTONE OIL CO.
KERN COUNTY
CAL.
LADY WASHINGTON WELL No 2
SUNSET OIL DISTRICT
CALIFORNIA KING RIG No 1
SUNSET OIL DISTRICT

REPORTED STRIKE ON ESPERANZA.

It is reported that the Esperanza Land and Oil Company's well on section 30, 21-15, Coalinga, is in oil sand. It is said that a fine showing of oil sand has been obtained and there is a good pressure of the gas. The gas is said to be so strong that it blows the water out of the bailer with almost every attempt at running.

Col. F. E. Windsor, general manager of the company, is absent from the city and hence his corroboration of the report could not be obtained. Last week, however, he was called to the property to look at what appeared to be a strike of good sand. At that time he declared the indications were

Old Lucile No. 1, Reflection, Coalinga

exceedingly favorable. He has always expressed much faith in the territory.

* * *

S. B. Connor, of San Francisco, representing a party of New York capitalists contemplating engaging in the oil business in California on a large scale, has just completed an inspection of the Coalinga field. Mr. Connor has visited practically every field in the State in the interests of the Eastern capitalists, and nowhere has he looked more favorably upon a field than he does on Coalinga.

While he stated he was not in a position to divulge the names of the people he represents, he gave assurance that his report on California conditions, and Coalinga in particular, would be very favorable.

The only question that causes Mr. Connor to hesitate about unequivocally recommending Coalinga as the field for the investment of the New Yorkers, is the high price at which

made by the Empire well, the deal is as good as closed.

The 120 acres lie around the forty acres of the Call, the northwest quarter of the northwest quarter. While it has been in Mr. Smith's name for some years past, Messrs. Chanslor, Canfield and Kerr each held an eighth interest. Following the strike of the Empire, two weeks ago, which gives an entirely new aspect to that portion of the field, Mr. Smith negotiated for the purchase of the outside interests in the piece for $90,000.

Though he paid what would have been considered, heretofore, a very good sum for the property, yet, on account of present development, it has proved to be an excellent purchase. This land adjoins the Empire on the west and is territory that heretofore was generally called "the break." oil lands and properties are held in this section. Mr. Connor has also been favorably impressed by the Santa Maria on account of its light oil and nearness to the coast, and it rests between that field and Coalinga for the decision. Mr. Connor is now en route to Santa Maria.

* * *

One of the biggest oil deals in the history of the field is being negotiated by Robert Hays Smith, the well-known capitalist, who is heavily interested in Coalinga properties. Mr. Smith purchased the three-eighths interest owned by Chanslor and Canfield and Johnnie Kerr in the 120 acres in the northwest quarter of 32-19-15, adjoining the Empire on the west, for $90,000, or $2000 for the acre. It is understood that Mr. Smith now has several offers of $3500 per acre for pieces of the territory, and judging from the showing being

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The Oil Authority of the Pacific Coast.

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CALIFORNIA OIL SITUATION.

Some time ago we called attention of our esteemed and venerable contemporary, the Oil City Derrick, the Standard Oil apologist for all things, that the situation in California was somewhat different than that in the eastern fields, and that "time will tell" whether or not these conditions would be permanent. We did not think the Derrick would, editorially, endorse our position in so short a time. Standard Oil is paying more than 40 cents and more than 50 cents for oil, and will soon be paying more than 60 cents, if it is not doing so now. California is indeed fortunate in having a market for fuel right at home, and it is fortunate also in having an extended market abroad, but it is still more fortunate in being independent of the Standard Oil Company. That is where the shoe pinches. But here is the Derrick's sayso on California oil:

"In another part of this paper appears the monthly statement of operations, production and stocks in the California fields. This is the third monthly statement presented by the Derrick for California and the most accurate statistics of the oil business in that State the trade has ever had. It will be noted that section is holding its own remarkably. The demand has increased almost in proportion to production and the addition to surplus stocks during October was small. True there are a larger number of wells shut in than for the preceding month, but the possible production of these cannot be included in the figures. It is the actual production that counts. Once again it must be recognized that California is fortunate among oil producing States in having so large a market for fuel oil right at home."

ASSOCIATED.

The Associated Oil Company is apparently to pursue a turnabout policy in the future, and to endeavor to regain the ground lost by its past methods. In other words, the Associated is desirous of securing the confidence of producers and of establishing harmony between itself and the people from whom it is desirous of purchasing oil, its life-blood.

The Associated will undoubtedly present, at the forthcoming annual meeting, a startling statement of its financial affairs, showing that it is prepared to pay a large rate of dividends from now on. It is stated on excellent, though unofficial, authority that the dividend to be declared in January will be in the neighborhood of $4 per share, hence the substantial activity and recent advance in the price of the stock. This has advanced in a few week's time from around $35 per share to $50, and there are those who predict that it will go to par as soon as the dividend rate becomes known.

Like the Standard, it has learned that producers are not to be bluffed or bulldozed into insane contracts at cut-throat prices, but that, on the other hand, they are independent in fact as well as in name through their alliance with the Union Oil Company. It will not be a strange state of affairs if the Associated, as a result of its past blunders, may be obliged to secure a portion of its oil from the Union, unless, of course, it secures sufficient production of its own from its valuable territory as yet undrilled to make up for the deficiency caused by the refusal of its officers to talk business at a critical time to the Independent agencies. It will not be strange either if the Standard is forced to do the same thing, for, according to indications, the Standard lacks several hundred thousand barrels monthly of having a sufficient supply to run its big refinery at Point Richmond to its full capacity.

NEW INDEXED MAPS ARE TO BE PUBLISHED SOON.

A new issue of "Indexed Maps of the California Oil Fields" is being prepared by Barlow & Hill, and its publication will be awaited with impatience by all interested in the oil industry. A feature of the new book will be a map to cover the entire oil belt from Temblor to Coalinga, including the new Devil's Den field. There is no authentic map of that great territory to which oil men are now looking, and a complete map will be a boon to the public.

The coming publication will include maps, brought right down to date, of Kern River, Sunset, Midway, McKittrick and Coalinga, as well as a general map of the State. The names of companies listed in the publication have also been revised, and the book will be complete in its every detail. The publishers are anxious to secure date of any companies not listed and those interested in new development would serve both themselves and Barlow & Hill by making their work known.

THE OILPORT REFINERY.

It is reported that the Union Oil Company is about to secure the refinery at Oilport from the California Petroleum Refineries, Limited, of San Francisco and London. It is also likely that included in the deal will be the Graciosa Oil Company and the Transport company, although this is problematical. The Union had let contracts for the construction of a refinery at Avila, but within the past few days the contracts have been cancelled. A sum of $700,000 had been made available for this purpose, and the change of plans is attributed to the deal either completed or under way for the Oilport refinery.

Unfortunately this refinery has never been in active operation for any length of time and needs some additions and changes yet to make it available. Stockholders, both in California and in England, will undoubtedly welcome any deal that will let them out anywhere near whole on their investment. Numerous misleading statements have been made regarding the affairs of the Refineries company, such as statements to the effect that the refinery was running and the company paying dividends and others of similar nature. It is to be hoped that everything will now be cleared up and that English investors will not feel too badly towards California on account of their unfortunate experience in this instance.

MUST GO HIGHER.

The Standard is now offering fifty cents per barrel for oil at the well. Quite a difference from the announcement made last August, when the Octopus, in its most condescending manner, stated it was willing to give the producers forty cents for their oil. And unless we are mistaken the Standard will have to go beyond fifty cents before it will be effective in diverting very much of the present production. Last month's report of the Standard's runs shows that the big company was forced to draw on its storage to satisfy the demands of

its business. This shows that the Standard is badly in need of oil. The failure to produce the desired stuff itself means that it must buy from producers.

The Associated, but a short time ago, contracted with a strong Midway company for 2,000,000 barrels at fifty cents. While this is a good price for the producer, we do not believe it is all the price present conditions warrant. In the stragetic battle that is now being waged, the Associated nearly "slipped one over on its opponents," as the saying is. The Associated knew where to pull the strings and it pulled them, and that is why it got a big fifty cent contract. Not because oil is worth only fifty cents.

As yet no inkling has been got as to the Producer's contracts. What the agency members are to receive under the new arrangement is still in the dark. The officials of the company declare the price of oil is going higher.

With the independent production pretty well controlled by the Producers and the Associated, the Standard must bid higher.—Coalinga Record.

DECISION ADVERSE TO STANDARD OIL COMPANY.

In a decision rendered November 20 by the United States Circuit Court for the eastern district of Missouri, in session at St. Paul, Minn., the Standard Oil Company of New Jersey was declared an illegal combination in restraint of trade, and was ordered dissolved.

Summing up the findings of the court on all the points the decree declares "that this combination or conspiracy is a combination or conspiracy in restraint of trade and commerce in petroleum and its products among the several States, in the territories, and with foreign nations, such as an act of congress, approved by congress on July 2, 1890, 26 stat., 209, C. 647 (U. S. Comp. stat. 1901, page 3, 200), entitled 'An act to protect trade and commerce against unlawful restraints and monopolies,' declare to be illegal."

Continuing, the decree says that the seven individual defendants (John D. Rockefeller, William Rockefeller, Henry H. Rogers, Henry M. Flagler, John D. Archibold, Oliver H. Payne and Charles M. Platt) and the thirty-seven companies, as follows: Anglo-American Oil Company, of England; Atlantic Refining Company, of Pennsylvania; Borue Scrymser Company, of New Jersey; Buckeye Pipe Line Company, of Ohio; Chesebrough Manufacturing Company, New York; Colonial Oil Company, New Jersey; Continental Oil Company, Iowa; Crescent Pipe Line Company, Pennsylvania; Cumberland Pipe Line Company, Kentucky; Eureka Pipe Line Company, West Virginia; Galena Signal Oil Company, Pennsylvania; Indiana Pipe Line Company, Manhattan Oil Company, Ohio; National Transit Company, Pennsylvania; New York Transit Company, Northern Pipe Line Company, Pennsylvania; Ohio Oil Company, Prairie Oil and Gas Company, Kansas; Security Oil Company, Texas; Solar Refining Company, Ohio; Southern Pipe Line Company, Pennsylvania; South Pennsylvania Oil Company; Southwest Pennsylvania Pipe Lines Company; Standard Oil Co. of California, Standard Oil Co. of Indiana, Standard Oil Company, of Iowa; Standard Oil Company, of Kansas; Standard Oil Company, of Kentucky; Standard Oil Company, of Nebraska; Standard Oil Company, of New York; Union Tank Line Company, New Jersey; Vacuum Oil Company, New York; Washington Oil Company, Pennsylvania; Waters-Pierce Oil Company, Missouri, "have entered into and become parties to this combination, and by means of this combination have combined and conspired to monopolize and are continuing to monopolize a substantial part of the commerce among the States, in the territories, and with foreign nations, in violation of section 2 of the anti-trust act."

The decree says the following companies have not been proved to be engaged in the operation or carrying out of the combination, and the bill is dismissed as against each of them:

Argand Refining Company, American Lubricating Oil Company, Acme Oil Company, Baltimore United Oil Company, Buffalo Natural Gas Fuel Company, Bush and Denslow Manufacturing Company, Camden Consolidated Oil Company, Commercial Natural Gas Company, Connecting Gas Company, Eastern Ohio Oil and Gas Company, Eclipse Lubricating Oil Company, Florence Oil and Refining Company, Franklin Pipe Company (Limited), Lawrence Natural Gas Company, Mahoning Gas Fuel Company, Mountain State Gas Company, National Fuel Gas Company, Northwestern Ohio Natural Gas Company, Oil City Fuel Supply Company, Oswego Manufacturing Company, Pennsylvania Gas Company, Pennsylvania Oil Company, People's Natural Gas Company, Pittsburg Natural Gas Company, Platt and Washburn Refining Company, Republic Oil Company, Salamanica Gas Company, Standard Oil Company of Minnesota, Taylorstown Natural Gas Company, Tidewater Oil Company, Tidewater Pipe Company (Limited), United Natural Gas Company, United Oil Company.

Because the stock of the various corporations was acquired by the Standard Oil Company in an illegal manner, the decree enjoins "the Standard company, its directors, officers agents, servants and employees from voting any of the stock in any of the subsidiary companies, and from exercising or attempting to exercise any control, direction, supervision, or influence over the acts of these subsidiary companies.

The case will go to the Supreme Court of the United States for final adjudication.

CRUDE METHODS OF EARLY OIL WELL DRILLING.

It is an interesting fact that in the early days of drilling oil wells it was not known that a round hole could be drilled with a bit, and it was considered necessary to "run" a reamer immediately after the bit in order to make the hole round. Reamers are no longer used for drilling, a bit only being necessary. At the Drake well two bits were used. A center bit (one and a half inches) was used to drill three or four feet, then a second and larger bit was used, and after that the reamer was inserted to make the hole round and of the desired diameter.

Colonel Drake, when drilling the first oil well ever brought in, at Titusville, Pa., expected to drill down to the rock, but it was impossible to do so, and iron pipe was used for the purpose. This was the first time iron driving pipe was used. The pipe was made of cast iron, plain end, presumably four-inch diameter, but it may have been five-inch, the size used in 1861, when Mr. Eaton, an early day oil man still living, visited Titusville for the first time. Loose wrought iron bands were riveted to the ends of the pipe.

The driving of the pipe was accomplished by means of a wooden maul or battering ram, supported on the sides by wooden guides. The ram was raised by means of an old-fashioned windlass turned by hand and then allowed to drop on to the pipe. It seems singular that with an engine close at hand, steam power was not used instead of this slow process. After the pipe had been driven, drilling was resorted to, and the well went down at the rate of about three feet a day.

The well was actually completed on Saturday, August 27, 1859, at a depth of 69½ feet. It was not customary to work on Sundays, and when the men left the well on Saturday night they did not know oil had been struck. Mr. Smith, an associate of Colonel Drake, visited the well on Sunday, when he discovered the hole full of oil. The news spread rapidly and caused great excitement.

One of the men who bored on the well—Samuel Smith, of Tarentum, youngest son of William Smith, the man who contracted to drill the well—lives at Titusville, and many interesting facts about the well have been obtained from him.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

The No. 1 well of tbe Nevada Petroleum is still pumping and continues to give a good production. Sand still causes some trouble and prevents a steady production. It is difficult to get an accurate line on the production, as it varies considerable from day to day. Some days it produces at a 225 clip and then the day or two following at about 300 barrels. The company's No. 1 well on section 20 is down 1600 feet and No. 8, on section 30, down about 2100 feet.

The Spinks Crude Oil Company, which is beginning development work on the piece recently purchased from the Shawmut Oil Company, has filed its articles of incorporation. The board of directors consists of C. C. Spinks, J. H. Bartlett, L. B. Vallmer and J. J. Walsh, all residents of Monrovia, and Lewis Bradbury of Duarte.

The water has been pumped off of the sand in the Empire well, and one thousand feet of oil was standing in the hole. The well will be drilled through this sand streak. It was the first oil bearing stratum encountered thus far, and as the drill is in but a few feet a big producing well is expected.

Marve Corey, the well-known contractor, is preparing to start two more strings of tools running very shortly. He has the contract for the Spinks Crude and Ophir wells, and the derricks on both properties are now being erected. As soon as completed, they will be rigged up and drilling will be begun at once.

Superintendent De Long of the M. K. & T. reports that they bave nearly finisbed well No. 2, having successfully shut off the water and gone to a depth of 2747 feet.

The Blue Moon well was started, and spouted at a couple-of-thousand-barrels a day rate, but the intermissions between the gushes reduced the production to about 400 barrels a day.

An engine and set of rig irons has been shipped out to the Walker Oil Company in the Devil's Den.

Water was cemented off in the No. 5 of the P. M. D. and O. The hole is about 2600 feet deep.

The Boyehester, one of the new companies on section 18, 21-15, on which section considerable interest is being manifested, has spudded in.

Lumber has been bauled to the property and rig builders have begun the derrick of the Little Jumbo, the new company just organized to develop about 8½ acres just at the edge of town.

The De Luxe has started pumping and gives oil at the rate of 400 barrels a day.

The Blair is down 2175 feet. An underreamer was put into the hole and trouble with the shoe has caused a slight setback.

The new derrick has been built over the Azores and work was resumed drilling a few days ago. The No. 7 well is down 650 feet. Good progress is being made.

The rig for well No. 12 of the Esperanza Oil & Gas Company has been completed and the well will be spudded in very soon.

Well No. 5 of the Coalinga Pacific has been cemented off at 1625 feet, in 6-ineh casing.

No. 7 of the B and B had the water shut off in the 8-inch casing at 1250 feet. Good progress is being made with the drilling.

The Coalinga National is down 1250 feet with 12½-inch casing. It is a nice hole.

George Roberts' No. 6 well on the Stockholders is down 550 feet.

Coalinga Unity No. 1 has been drilled in, and true to his promise, Jim Sbreeves, wbo contracted the drilling, broke the west side record again. The hole was in the oil sand and drilling completed twenty days from the day of spudding in. This beats Shreeves' previous record made on the New York-Coalinga property by one day.

All told about 150 feet of sand was passed through, but all except the stratum in which the well is finished, is of the heavier tar sand. The drilling of the second well on the Unity will be begun very soon, the lumber for the rig having been hauled out last week.

DELIVERING OIL AT ASSOCIATED PIPE LINE.

Oil is now being delivered into storage tanks at the local terminal of the new Associated Oil Company pipe line. Of the five tanks to be reserved for Coalinga oil, three have been completed and tbe other two are rapidly nearing completion. Work is beginning on the two tanks for the McKittrick oil to be transported through the new line soon to be built between Coalinga and the soutbern field.

Two 55,000 barrel and one 20-000 barrel tank are completed and they will be filled with storage oil in rapid succession. It will be March or April, however, before the oil is pumped. The boilers are now being erected, but the pumps have only recently been shipped, and it will be several weeks yet before they arrive.

The final survey on the McKittrick-Coalinga line is now being made and construction work will begin soon. Materials for the telephone line have been delivered both at this end and at McKittrick, and the crews are expected to begin the erection of the line almost any day.

The new pumping station will have a capacity of 307,000 barrels for storage. The McKittrick tanks will hold 67,000 barrels and those for Coalinga oil will accommodate 240,000 barrels.

HAS A NEW METHOD FOR SEPARATING OIL.

The Rice Ranch Oil Company has installed, tested and pronounced a success a system of separating its oil from the water and sediment, with which it is mixed on coming from the wells, patented by J. A. Dubbs of the Sunset Refining Company of Los Angeles. Especial difficulty was encountered with this oil on account of its high gravity—about 25—and it can not be handled the same as the lower grades. The process is being used for the first time, but may be employed also by Mr. Dubbs at his refinery near Los Angeles, says the Times.

Work was started nearly a year ago building the plant, and it has just been successfully operated within the last three weeks. The company has six wells and produces about 12,000 barrels a month. Before the new system was put into use the tests showed 5 to 20 per cent foreign matter, and now it shows 1 per cent or less.

STRIKE OF THE EMPIRE PROVES ABSENCE OF BREAK.

The Empire well, in the northeast quarter of section 32, 19-15, in territory which was generally believed to be a break between the east side and the west side fields, was drilled into the oil sand recently and the indications are that a big well will be brought in. The sand was entered at 2570 feet and with the drill in the pay streak but a few feet, there is several hundred feet of oil in the hole in spite of the fact that nearly two thousand feet of water is standing in the hole. The oil is of light gravity, similar to the east side oil, and proves that the bearing sands underly that portion of the field lying between the east and west sides which has heretofore been termed as "the break."

Tests of the oil have been made and it is shown to be similar to the Commercial Petroleum product, is about 20 gravity. Water was cemented off with the 8¼ inch pipe and the well is in fine condition. It will be finished up with 6¼ inch pipe.

The Empire Oil Company was formed by S. A. Guiberson, Jr., of this city, H. A. Whitley of San Francisco, and John Twohy of Spokane, Wash. They purchased the northeast quarter of the section and organized the company on the south half of the quarter. Owing to the theory that had been advanced that a break existed between the two sections of the field and that that particular territory was worthless as oil land, the friends of the three organizers shook their heads when approached to buy stock in the company. In fact, it was a difficult matter to get any purchasers for stock.

GAP IN PRODUCER'S TRANSPORTATION LINE HAS BEEN CLOSED.

The Producer's Transportation Company made the connection last Sunday that will complete their line the full distance from Coalinga to San Luis Obispo. But seven miles more remain to be laid, that from San Luis Obispo to Port Hartford. The crew working out from Bakersfield to the west side is making good headway. There is but one crew working on the line from McKittrick to Junction, as that portion of the pipe line is nearly completed also. By the completion of the Junction-San Luis part of the line nearly two hundred men and quite a number of teams will be laid off.

SUNSET—MIDWAY—McKITTRICK.

On Sunday afternoon at 4 o'clock, the Santa Fe's well No. 2 on section 6, in the Midway field, began spouting oil over the derrick at a rate estimated all the way from 2000 to 5000 barrels per day, Santa Fe men giving the former figure. All the men and teams the company could summon were set to work building hasty reservoirs in the canyons, but with that all the oil could not be saved.

That the well brought in on section 6, 30-22, north of McKittrick, by J. C. Yancey and his associates, constitutes a new strike and brings in practically a new field, is the opinion of Mr. Yancey and other oil men. The well is upward of two miles from any other good wells, and is separated from the producing part of the present McKittrick field by territory where drilling has not yet proven successful. If the theory of Mr. Yancey and others is correct, there is good reason to believe that a new strip of producing territory parallel to the present McKittrick field and extending twelve to fourteen miles in length may be opened up.

The Yancey well was put on the beam two days ago and is now pumping about 150 barrels of oil and sand despite the fact that it is sanded fifty feet above the perforations. The well is 1100 feet deep.

Road View Coalinga, West Side.

The St. Lawrence Oil Company, on Section 5, 32-23 in the north end of Midway, perforated its first well on Friday, and it is flowing 1500 barrels every twenty-four hours.

The oil is of light gravity and was reached at a depth of over 2100 feet. The well is two miles south of the Crandall well. Stockholders of the St. Lawrence are elated. Ben Stroud is superintendent of the St. Lawrence.

The Lady Washington well No. 2 is still being troubled to some extent by the heaving of the sand caused by the enormous gas pressure. The well flows at times and then sands up, but it is believed that the other 100 feet necessary to reach the main sand will be drilled within a short time.

The Madison No. 2 well at McKittrick is down something over 1,000 feet, and expects to get the sand at any moment. A streak of tar sand has already been passed through and there is every indication that a 150-barrel well will be developed.

McCutchen Brothers' No. 1 is doing 150 barrels a day and getting better. This well was famous when first brought in

something like a year ago. It started off doing 900 barrels a day, and kept up that rate until it had brought in a total of $75,000 in money for its owners at thirty cents a barrel.

Something happened then. A landslide carried away the lower part of the casing. The well was worked with for a long period and was partially restored. Under the air compressor it produced intermittently, but not long ago it began flowing steadily at a 100-barrel gait and has increased now to 150.

Muscatine No. 1, on the northwest quarter of the southeast quarter of 1-11-24, has been deepened lately and came a few days ago with a flow of 150 barrels.

H. H. Blood, one of the successful pioneers of the Kern River field, is preparing to begin drilling on an eighty in the north half of section 4-32-23. Mr. Blood has associated with him some British Columbia capitalists. This land is well located and is considered very promising territory.

The Santa Fe drilling on section 26-31-22 has entered a considerable body of sand at a comparatively slight depth, about 1200 feet. This is two miles south of the Bear Creek strike and the indications show that it is in the same formation.

On section 6-32-23, some two miles to the southwest, near the Midway Crude, a very promising showing has been made. The oil has been found at a shallower depth than the adjacent wells on the flat, but is accompanied by plenty of gas pressure and blow outs are numerous. The well is not yet finished.

The Hawaiian (Crandall-Matson) Oil Company has sold its entire production for a term of years to the Associated Oil Company at fifty cents a barrel. Deliveries are to begin at the earliest time convenient to both parties. No stipulated quantity is named in the contract owing to the fact that it is impossible even to approximate with any degree of accuracy how great the amount of oil the Hawaiian company may find itself able to produce.

On section 35-12-24, the Webster lease, the Union's test well is hung up by the loss of a string of tubing. This tubing is being milled out and the job has lasted a month already, with much work on it yet to be done.

The Producers' Transportation Company's two 55,000-barrel tanks, which are stationed on section 34, at the end of the main line, are about completed. Laterals will run to these tanks from all points in the Maricopa field.

United States Geologist, Ralph E. Arnold, is engaged in completing his survey of the Sunset, Midway and Maricopa fields.

Sam J. Dunlap has leased the northwest quarter of the northwest quarter section of 26-32-32 from the Mt. Diablo Oil Company and has organized the Dunlap Oil Company, which will immediately commence to drill the land. The leasing company is capitalized for 200,000 shares of par value of $1.00 each and pays the Mt. Diablo 20 per cent royalty.

It is interesting to note in this connection that Mr. Dunlap was at one time the owner of the entire section, purchasing it several years ago from the original locator for the trifling sum of $6,400.

He was one of the promoters of the Mt. Diablo Oil Company and later sold out to his associates. If the Dunlap company succeeds in getting a production of 1000 barrels a day, which it is conceded is a very modest estimate, it will pay the parent company at least $100 a day royalty, which in ten years would aggregate $365,000, or about sixty times the price of the entire section less than ten years ago. If the entire section is oil producing and was leased on this royalty the revenue in ten years from royalties would reach the dazzling sum of $2,840,000.

The storm of last week washed out the new sump hole on the Mascot lease and 600 barrels of oil were washed out. By the breaking of a pipe line a few days ago, the Standard lost 2600 barrels.

The Brockton having plugged and abandoned its No. 1, owing to the impossibility of shutting off the water, has drilled No. 2 into the sand successfully. At last accounts the drill was forty feet in the sand.

The Burks, on section 22-32-23, has struck its top water at 1165 feet, and is cementing.

The strike of the Standard on section 20 is by far the best showing the company has in the Midway field. It is impossible to form any estimate of the probable size of the well, but in its superiority over everything heretofore found on 28, 30, or even 14, the difference is plainly marked.

The hole is 3000 feet deep, and the water is now being cemented off.

200 LOS ANGELES PEOPLE VISIT OIL FIELDS

A large party of Los Angeles people with a special train under the auspices of the Sierra Madre Club of that city, visited the Coalinga, Kern River, Sunset, Midway and McKittrick oil fields and were handsomely entertained by the oil men of the various districts. While only a few hours were spent in each district the party gained a pretty good idea of the vast operations being conducted in all the fields. Many of the party had never before been in any of these productive districts and were, naturally, surprised at what is going on. The result of the visit will undoubtedly be to arouse a keener interest in the business and a still further increase in operations.

It will have a tendency to broaden the market for oil shares as many of the visitors were brokers with large clientage whose attention will now be called to the great investment opportunities to be found in oil.

The visitor's attention was called, especially to some of the more prominent operations in the various districts and in the Kern River field several object lessons were noted.

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As an example of the worth of oil, it is said the Peerless Oil Company on Sections 31, 28-28 and Sections 8, 29-28, a total of 160 acres has produced in the time it has been working about 11,500,000 barrels of oil, enough oil to cover the entire quarter section to a depth of nine feet. Its value is correspondingly enormous. Other examples of individual leases are also marvelous. The Merrill Crude of the Section Six Oil Company on Section 29, 28-28 has made a stupendous showing, netting over $10,000 per acre since it has been perforated.

The Kern river oil fields cover over ten square miles. The west side oil fields, Sunset, Maricopa, Midway, McKittrick and Templor form an almost unbroken chain of oil producing territory thirty miles in length. The surface indications extend for many miles from either end of the proven belt.

The Kern river oil field is apparently a great underground pool of oil at least 6500 acres in extent and having a saturated strata of sand from 200 to 500 feet in depth. Conservative oil men give it an average depth of 300 feet.

Over 1500 wells have been drilled and some 60 rigs are now runnig. Perhaps 75 per cent of the proven teritory has been drilled. The oil is of an asphalt base, of a gravity varying from 11 to 16 degrees, oil of 14 degrees predominating.

The 8-inch pipe lines have been laid from the Kern river field to San Francisco bay, one by the Standard Oil Company ending at the latter's refineries at Point Richmond, and the other by the Associated Oil Company ending at Port Costa. The Southern Pacific and Santa Fe railroads, using a common spur, tap the Kern river field.

The Standard Oil Company has built huge earthen reservoirs holding from 500,000 to 1,000,000 barrels each, and at the present time has about 12,000,000 barrels of oil stored in the Kern river field. It is estimated that nearly 20,000,000 barrels can be stored in the Kern river field. The production of the field is on the increase, and is probably greater than at any other long continued period, although it is estimated that at the height of the first boom the field was producing 50,000 barrels per day, against 41,000 barrels now.

SECTION SIX.

The Section Six Oil Company has recently secured what is known as the Merrill Crude lease in the Kern River district. This lease is netting above all expense something like $3,000 per month. It is pointed to by Kern River people as one of the best examples of what can be accomplished in oil production, as it has produced to date over $10,000 per acre net; $15,000 per acre gross. It is now producing about $500 per acre per month, or $6,000 an acre a year. The Section Six Company also owns 43 acres in the famous section six, of Coalinga, and 440 acres in the Devil's Den district, besides two-fifths of the capital stock of the Templor Ranch Oil Company, which has nine producing wells with a capacity of about 500 barrels a day. Section Six is listed on the Los Angeles ex-

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change and has advanced within the past two weeks from 50 cents per share to nearly 60 cents. Its first dividend will be paid in January.

The Section Six Company has been through some hard times in the past three years, but is now in fine shape, due largely to the business judgment and foresight of Mr. H. B. Gutbrey, its general manager. No assessments have been levied, and it can be said that very few companies have gone through what the Section Six has without calling upon stockholders for assistance.

CANADIAN PETROLEUM NOTES.

There is considerable talk these days with regard to Alberta as a great oil field. This province's limitless supply of coal, which apparently underlies all sections of Alberta, together with the natural gas which is such a feature at Medicine Hat and at Lethbridge, indicates that petroleum, too, may exist in vast subterranean stores. In fact, it has long been definitely known that oil does exist in several localities. Trappers and traders traveling through the foothills of Western Alberta years ago discovered the presence of oil, and early prospectors noticed the greasy scum that floated on the creeks and sloughs of a certain neighborhood at the foot of the Rockies. They skimmed it from the surface, gathered it in pans, and with a very rough refining found that the greasy green deposit would ignite. Some thirty years ago several men of the district got together and determined to investigate. So a drilling apparatus was procured from the East at very considerable cost and a derrick was set up in a likely spot, and boring operations began. But work had not long proceeded when it was abruptly stopped. A prairie fire swept through the hills one day and a few hours later nothing remained of the boring plant but a few charred timbers. It was not replaced. Operations had not given results. For a number of years nothing more of importance was done in the way of prospecting. It was premature in a sparsely settled country like Alberta where practically the only industry was cattle raising. Along, however, about 1901, when the big rush to the Canadian West really set in, interest in the coal fields was revived. A stock company was formed, upon-to-date machinery was purchased and operations once more started. Considerable boring was done. Now and then a very slight flow of oil oozing up through the bore-hole had by its appearance reassured the proprietors, who kept on drilling. But the trickles of oil proved to be only pockets or the accumulations in the bore due to leakage. The main flow they could never strike, the much hoped-for gusher which was to make all the shareholders rich was never discovered, and the source from which the seepage of oil comes is still a mystery hidden perhaps thousands of feet below the rocks or perhaps only a hundred feet below the surface, and daily within a stone's throw of the laboriously wrought bore in whose depths much good money vanished. The oil exists in quantity somewhere near, but that is all the consolation the stockholders have.

This tantalizing oil field is located some forty miles south of Pincher Creek.

Several efforts to find the whereabouts of petroleum and natural gas have been set on foot in Northern Alberta, at or near Edmonton; but so far without success. Similar indications to those in the southern part of the province occur, but the various wells that have been sunk have failed to reveal anything of real importance. Further north, in the Peace River country, projects are on hand to sink wells for the much-sought-after oil. Indications, thus far, are better than in Southern Alberta.

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LUCEY SUPPLY BUSINESS NOT TO BE SOLD.

From some unaccountable source the report was prevalent last week that the oil well supply business of Captain J. F. Lucey was to be sold. When the Captain was apprised of the alleged fact, he immediately entered an emphatic denial. The Captain has lots of good oil well supply goods to sell, but no business to dispose of. Like everybody else engaged in the oil business or its dependent businesses, he sees nothing but golden prosperity ahead for some time to come.

EXPORTS OF MINERAL OILS.

This statement includes only exports of mineral oils from the customs districts named, and embraces about 96 per cent of the mineral oils exported from all ports during the periods indicated.

Articles and Customs from which exported	October— 1908 Quantities Gallons	1908 Values Dollars	1909 Quantities Gallons	1909 Values Dollars
Total mineral oils:				
Baltimore	1,616,946	113,776	414,794	58,919
Boston and Charlestown	35,297	6,900	17,882	2,903
New York	68,000,228	5,190,552	66,531,668	5,323,717
Philadelphia	41,971,369	2,693,919	36,377,909	2,142,942
Galveston	26,376	5,193	64,747	11,237
Sabine	15,797,641	636,182	12,991,804	463,738
San Francisco	10,114,086	466,217	11,339,072	358,348
Total	137,561,943	9,112,739	127,737,876	8,364,804

Articles and Customs from which exported	Ten Months Ending October— 1908 Quantities Gallons	1908 Values Dollars	1909 Quantities Gallons	1909 Values Dollars
Total mineral oils:				
Baltimore	20,682,939	1,424,246	18,949,146	1,394,065
Boston and Charlestown	933,691	85,413	810,347	74,041
New York	684,954,829	56,847,326	657,484,721	52,448,311
Philadelphia	386,661,517	24,812,404	341,977,025	21,092,235
Galveston	305,785	50,721	420,663	50,408
Sabine	92,732,678	3,725,556	145,868,141	5,660,251
San Francisco	69,220,764	3,134,227	81,826,444	2,730,908
Total	1,255,492,203	90,079,893	1,247,136,487	83,454,219

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Concord Commercial Co.

333 Monadnock Bldg., San Francisco, California

DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES IN NOVEMBER.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Oct. 15, '09	.03	11,400	$ 148,200
Amalgamated	Nov. 15, '09	1.00	50,000	1,350,000
American Pet.	Nov. 1, '09	1.00	110,449	561,160.50
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated	Mar. 1, '07	1.50	446,055	1,548,368.55
Bay City	Aug. 10, '09	.30	30,000	40,000
Brookshire	Nov. 1, '09	.01	5,000	432,500
Caribou	Nov. 15, '09	.25	20,175.75	619,828.74
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Claremont	Nov. 28, '09	.02	9,000	278,000
Coalinga Pac.	Oct. 25, '09	.10	6,500	100,750
Columbia	Nov. 25, '09	½c	4,996.31	239,822.70
Del Rey	May 15, '09	½c	3,927.50	11,782.50
Esperanza	Nov. 27, '09	.02	3,200	46,250
Euclid	Nov. 1, '09	.01	3,500	110,000
Four	Oct. 25, '09	.01	3,000	207,000
Globe	Oct. 1, '09	.01	6,000	75,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	Nov. 20, '09	.02	2,000	466,000
Homestake	Oct. 1, '09	.10	1,000	75,250
Illinois Crude	Nov. 1, '09	.01	2,000	80,000
Imperial	Oct. 6, '09	.60	60,000	1,880,000
Junction	June 1, '09	.01	2,500	20,000
Kern Oil	Nov. 19, '09	.22	22,000	42,000
Kern River	Feb. 3, '09	.10	2,000	98,000
Linda Vista	Nov. 6, '09	.01	3,838.50	65,254.50
Lucile	Sept. 12, '09	.10	2,670.44	37,386.16
Mexican Pet.	Nov. 1, '09	.01¼	84,740.32	3,135,653.12
Mecca	July 15, '09	.03	12,675	71,825
Monte Cristo	Oct. 15, '09	.03	15,000	340,000
Nevada Co.	Oct. 13, '08	.04	10,000	40,000
Palmer	Nov. 20, '09	.01	18,020.05	178,280.70
Paraffine	Nov. 15, '09	.01	3,000	3,000
Peerless	Sept. 20, '09	.06	6,000	801,000
Piedmont	Aug. 16, '09	.01	3,890	22,987.30
Pinal	Nov. 30, '09	.10	15,000	849,841
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Record	Nov. 16, '09	.05	5,000	25,000
Reed Crude	July 25, '09	.05	5,000	1,112,000
Rice Ranch	Nov. 10, '09	.01	3,000	87,000
Royalty	Nov. 10, '09	.02	400	7,200
S.F. & McK.	Nov. 1, '09	.30	15,000	280,000
Sauer Dough	Nov. 26, '09	.05	9,975	492,366
Sesnon	Nov. 24, '09	.15	15,000	60,000
Silver Tip	Oct. 31, '09	.10	7,500	7,500
Sovereign	Oct. 1, '09	.10	5,000	85,000
Sterling	Sept. 15, '09	.25	62,500	684,500
Superior	Nov. 13, '09	.01½	7,500	52,500
S. W. & B.	Sept. 10, '09	.01	3,770	41,470
Thirty-Three	Sept. 3, '09	.30	30,000	670,000
Traders	Nov. 15, '09	1.00	11,550	123,700
Union	Nov. 20, '09	.50	124,813	5,869,003.15
United Pet.	Nov. 20, '09	.50	40,375.50	2,017,457.93
Wabash	Nov. 16, '09	.01	3,000	108,000
West Coast, pfd	Nov. 15, '09	2.00	20,816	62,448
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000
Total Dividends Paid to Date				$26,704,036.85
Total Dividends paid by the above Companies for November, 1909				613,349.43

The Good Luck Oil Company, operating in the northeast quarter of section 22, 19-15, has just paid its first dividend of 1½ cents a share on the 100,000 shares of the corporation. The par value of the shares is $1 and at the present time $2 is bid for the stock, but none is being transferred.

The dividend is from the production of the No. 1 well, which the company brought in in July. The oil is being sold on a 500,000 barrel contract to the Associated at $.50 per barrel. A second well is expected to be producing in about two weeks. It is 1340 feet deep and the water has been shut off for the third time. A better producer is anticipated, as a sixty foot sand stratum is expected.

James Madison, of San Francisco, and A. Albrecht, of Fresno, are president and secretary, respectively, of the company.

TEXAS COMPANY MAY BUY.

There is a rumor that at the forthcoming auction sale of the properties of the Waters-Pierce Company in Texas the Texas company will be the strong bidder for the property. It is an impossibility for the Standard interests or anybody directly or remotely connected with the Standard or even suspected of friendship for the Standard to buy the Waters-Pierce properties. The Texas company has been a competitor of the Waters-Pierce in Texas, and the properties of the Waters-Pierce would be worth more to the Texas company than anybody else. The story goes that in anticipation of the purchase of the plant of the Waters-Pierce, the Texas company is preparing to double its pipe line capacity. Should the Texas buy the Waters-Pierce a doubling of the pipe line capacity would be necessary, as the present capacity of the Texas line could not possibly be increased to more than 20,000 barrels of oil a day, and this would be entirely insufficient for the increased demand, but no statement can be had from the Texas company for the reason that the Texas company does not make statements.

California Oil

We are on the Ground

We are glad to announce that Mr. C. F. Whittier, who has been identified with the California oil industry almost from the first discovery of fuel oil in the State, has associated himself with the Campbell Investment Company, and the firm will be known in the future as the Whittier-Campbell Investment Company. Mr. Whittier will look after and pass on all land and leases purchased by the company.

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California Oil

Whittier-Campbell Investment Company

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"CALIFORNIA OIL FIELDS"

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Sagar & Loomis

711-713 Phelan Building San Francisco

LOS ANGELES QUOTATIONS.

Company.	Bid.	Asked.
Amalgamated Oil	.....	70.00
American Crude Oil Co	1.00	.....
American Petroleum Co. (pfd)	92.00	.....
American Petroleum Co. (com)	76.00	77.00
Associated Oil	50.87½	51.00
Billiken Oil Co	.15	.....
Brookshire Oil	.....	1.65
Central	1.33¾	.....
Cleveland Oil Co	.24¼	.....
Coalinga Blue Moon	.....	.47
Columbia	1.10	1.25
Continental Oil	.36	.....
Elk Consolidated Oil Co	.02	.....
Euclid Oil Co	.50	.75
Fullerton Oil	2.10	2.35
Globe	.18	.19
Jade Oil Co	.16	.....
Mexican Petroleum	.....	1.35
Mexican Petroleum Ltd. (pfd)	67.50	.....
Mexican Petroleum Ltd. (com)	30.00	30.25
New Pennsylvania Petroleum Co	.....	.....
Olinda Land Co. (Oil)	.29½	.35
Palmer Oil Co	.95	1.10
Perseus Oil Co	.....	.35
Pinal Oil Co	.....	13.00
Piru Oil & L. Co	.15	.....
Reed Crude	.26	.....
Rice Ranch Oil Co	.....	1.18
Section Six Oil Co	.58	.....
Trader's Oil Co	109.00	112.50
Union	103.25	103.50
Union Provident Co	102.00	103.00
United Petroleum	103.00	105.00
West Coast Oil Co	9.00	.....
Western Union	.....	200.00

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

Company.	Bid.	Asked.
Amalgamated Oil	60.00	.....
Amy	2.00	.....
Apollo	.13	.17
Associated Oil Tr. Cer	53.25	53.50
Blue Moon	.40	.43
Brookshire	1.10	1.40
California Oil & Gas	.....	.64
Caribou	15.25	15.50
Chicago Crude	.11	.....
Claremont	1.95	2.10
Eldorado	.10	.....
Esperanza	1.50	2.00
Four	.23	.....
Fulton	1.00	.....
Illinois Crude	.52	.58
Imperial	.....	32.00
Linda Vista	.25	.....
Lucile	12.00	.....
Monte Cristo	1.65	1.75
Nevada County	.25	.....
New. Penn. Petroleum	.....	.80
Paraffine	1.10	.....
Palmer	.92	.93
Piedmont	.16	.20
Pinal	6.50	.....
Producers'	2.00	.....
Record	4.00	5.00
S. F. & McKittrick	25.75	.....
Sauer Dough	.....	3.50
Section 25	15.00	.....
Sesnon	8.00	10.00
Sovereign	.....	.26
S. W. & B	.65	.....
Sterling	3.50	3.75
Superior	.15	.....
Turner	.65	.....
West Shore	.....	2.00
W. K. Oil Co	2.00	2.12

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Oil is today by far the greatest money-making industry in California. The Investing public is just awakening to this fact. California produced $26,000,000 worth of oil in 1908 and will probably increase that sum by six or seven millions more this year. Out of 74 listed oil companies, 48 are in the dividend-paying list. Thirty of them paid dividends in July aggregating over half a million dollars.

Oil exceeded gold in value last year by nearly $10,000,000. This year it will exceed gold by more than $12,000,000. The industry is just in its infancy, although it is 24 times greater than it was ten years ago.

We handle all good California oil stocks and can tell you best how to invest. Whether you have ten dollars or ten thousand to invest we can be of material assistance to you.

Associated with us are men of long experience in the oil business in California With their aid we publish the **OIL BOOK,** chock-full of information of all the fields. It will be sent to you free upon request.

We advised Templar Ranch when it was ten cents. It is now 30 cents. We advised San Francisco and McKittrick when it was $13.00 per share. It is now $25.00. We advised the purchase of Monte Cristo when it was 95 cents. It is now $2.85. Then there was Lady Washington at 10 cents. It is now 50 cents.

NOW IS THE TIME to investigate the oil business, for you will be looking into the face of fortune.

Call at our office or fill out the coupon and mail today.

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CALIFORNIA STATE

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., January 1910 No. 8

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If you contemplate an investment in oil stocks, why not buy seasoned securities that are already on a dividend-earning basis?

If you purchase good listed stocks, you can sell any day that you might wish to realize.

Did you ever notice that it is always easy to buy when you have the money?

Why not buy stocks that you can always sell when you need the money?

Practically all of the good California oil stocks are listed on the San Francisco or Los Angeles Oil Exchange as soon as they are on a producing, money-earning basis.

These seasoned securities can now be bought at prices enabling you to earn one per cent per month, or more, on your money from the day you invest, and many promise much greater returns as development progresses.

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Let us send you a list of all the California oil stocks that are listed and paying dividends, together with photographs and maps of the various fields and special reports.

We are operating in all of the California oil fields; our ten years of experience are at your service. We will gladly furnish you with a report on any California Oil company without charge.

There isn't any charge for our reports, lists, maps, etc. Whether you are a small or large investor, simply drop us a postal card, and we will send you much valuable information. Write today!

Lincoln Mortgage & Loan Co.

166 Geary Street — San Francisco, Cal.

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., January, 1910 No. 8

1909—1910

With the close of 1909 the greatest year in the history of California oil was brought to an end. January 1, 1910, saw California the greatest oil-producing State in the Union, being ten million barrels ahead of its nearest competitor, Oklahoma. The old year brought fortunes to hundreds of people; the new year will doubtless benefit as many more.

The change in the market for oil was one of the big surprises of the year. From an over-production of 5000 barrels per day to an under-production of an equivalent amount, and the rapid consumption of oil in storage; from a low price at the well to a high price; the demand for the product by foreign nations; a disposition on the part of the Government to consider oil as fuel for war vessels; a constant clamor for oil by railroads; the building of new petroleum-using railroad lines; the growth of the use of oil as fuel in big factories: these are a few of the conditions witnessed in the oil market for 1909 and a few also which the producers must cope with in 1910. The bogey of the past, over-production, is completely swallowed up in the bogey of the present, under-production. The greatest possible activity could not glut the market today.

Oil stocks have developed a stability during the last year which heretofore they by no means possessed. Standard, Union and Associated stocks and bonds may now be accepted in any State bank in California as collateral. In fact, many thousands of shares of these companies are said to be under pledge. Hundreds of small companies which were heretofore on the ragged edge in the stock exchanges of Los Angeles and San Francisco now find a ready market for their stocks. Buying stock is no longer considered in the nature of a gamble, if the stock is listed. The public even shows a disposition to purchase the unlisted stocks upon the market as so many of the companies have made good in the last twelve months.

A vast new oil territory has been opened up and proved. Coalinga and all the West Side oil fields in Fresno county have extended their boundaries away beyond what was formerly thought to be their limit. Territory which was considered as "wildcat" is now producing thousands of barrels of both light and heavy gravity petroleum daily. Hundreds of thousands of dollars has been sunk in wells on the boundaries of fields, and great is the return. A conservative estimate of the value of the newly proved fields would run into tens of millions of dollars.

A disposition is being shown toward the formation of enormous corporations, the American Oil Fields, Ltd., a $25,000,000 oil company, and the Producers' Investment Company being examples. The prediction that the Independent agencies will after a time become a close corporation has already been made by a contemporary. In this case another vast entity, whose sole object is to produce dividends, will have entered the field; or rather, will continue in the field, but with an object the reverse of its present purpose in regard to the producers outside the fold.

The outlook for 1910 is the brightest ever witnessed for the producers. Hundreds of strings of tools are working day and night. The State is being scoured by geologists for new territory. All lands which are even suspected of being oil-bearing are snapped up instantly. Oil is going and will continue to go higher. Oil lands are at a premium, every day witnessing sales at prices almost fabulous in the history of this State. $2,000 an acre is no unusual price today for oil-bearing property. This is the day of the producer, large and small alike, and the man who buys oil lands makes an investment of great future, as well as present value.

The value of the oil production for 1909 was approximated at $30,000,000. That 1910 will go far ahead of this figure is the belief of all oil men, but any prediction as to the exact amount of oil to be produced, or what the coming year will bring forth in the developing fields, would probably fall far short of the mark. The Derrick has always been a most conservative magazine, the utmost caution having invariably prevailed before statements appeared in its columns which bore even a taint of the "boom" spirit; but, with the greatest oil production ever had and marketed, with large new territories opened to development, a product whose value is greater than all the other minerals in the State combined, a product which runs over 5000 factories in Los Angeles alone, heats almost all of the office buildings of Northern California, runs the railroads, steamships and industries of the Pacific Coast—a product with a market extending all over the known world—the Derrick feels that it cannot be accused of inciting to high finance, or of exaggeration, when it states that it believes the year of 1910 will be the banner year in the production and sale of California oil.

CALIFORNIA.

California now stands first in oil production, producing fully 10,000,000 barrels more than Oklahoma, which ranks second. Developments begun in 1908 continued with increasing rapidity in 1909, many sections producing wells of large capacity. One of the important events of the year—an event that created excitement in oil circles—was the drilling in September of the Silver Tip well on section 6, Coalinga field. This

is said to be, with the possible exception of the Hartnell well, of the Union Oil Company, drilled at Santa Maria in 1904, the greatest well ever drilled in the State. Other important developments have extended the Coalinga field to the west and south. Successful wells drilled in the Sunset, Midway and other districts show the wonderful richness of the oil fields of the State. During 1909 several pipe lines were under construction to carry the increasing product, and although no exact statement can yet be made as to the total production, there was undoubtedly a very substantial gain over the output of the previous year and a satisfactory increase in price.

CANADIAN PACIFIC.

Bakersfield, Dec. 29.—The Canadian Pacific Oil Company of B. C., Ltd., claiming the ownership of forty acres in Coalinga, sixty acres in Midway and 640 acres "due northwest of Coalinga twenty miles," is indulging in some very lurid advertising in the Victoria, B. C., Daily Colonist, says the Oil World. Copies of the paper received here have called forth severe criticism of the company's agents, particularly for the map re-produced, purporting to show the Coalinga lease and adjoining properties.

The holdings of the Canadian Pacific in Coalinga consist of forty acres almost in the center of section 14-20-14. The Coalinga Petroleum Company on the east, the nearest producer, bas a small production from shallow wells. On this map thirty-three wells are shown on section 11 to the northb, when as a matter of fact the land bas never been drilled, and bas not a single well.

The caption under this map reads, in part, as follows: "See those little fly specs? That's what they look like, don't they? Each little dot represents a producing oil well. Perhaps a hundred wells have come in since this survey was made. There is no telling the exact value of the properties here shown, but a conservative estimate places tbe figure at $5,000,000,000."

Sounds like the old-time Nevada mining literature, don't it? The advertisement fails to give the location of the Midway lease, but tbe California Oil World is informed that it is the southwest corner of the northb half of the northwest quarter of section 4-32-23. One well is being drilled bere, which is tbe extent of the company's operations, though it is claimed that arrangements are being made to begin drilling tbe Coalinga ground.

Of this Midway sixty the advertisement quotes the company's superintendent, H. H. Blood, as follows: "I look for not less than 300 barrel wells here. As the property is good for fifteen wells when drilled up to its capacity, a daily production of 4500 barrels can be confidently looked for. WITH AN AVERAGE SATURATION, THE PROPERTY WILL PRODUCE A MINIMUM OF 100,000 BARRELS TO THE ACRE, OR A TOTAL PRODUCTION OF 6,000,000 BARRELS, REPRESENTING $3,000,000."

Of the 640 acres "twenty miles due northwest of Coalinga," the advertisement says: "This property was drilled on ten years ago by Charles L. Fair, the noted California millionaire. A tragedy alone prevented this from becoming, POSSIBLY, the greatest oil field in California."

In no place in the advertisement is stated tbe capitalization, the amount of treasury stock nor the obligations of tbe company. That the capitalization is sufficiently large is indicated by the following excerpt taken from the advertisement, as follows: "The idea is to sell a little of this stock—tbe first block, 250,000 shares— * * * * at 25 cents per sbare."

H. H. Blood, general manager for the Canadian Pacific Oil Company, Ltd., of British Columbia, has returned from a business trip to Victoria, where he put a summary stop to the boom literature which has been circulated by the fiscal agents of the company.

The Canadian Pacific is favorably located in the Midway field, where it is drilling a well on an eighty-acre lease in the northwest corner of 4-32-23, and has a good prospective property in Coalinga. Mr. Blood, who has charge of the field operations, is a thoroughly posted and competent man, who considers the prosy truth concerning his company's California oil lands amply sufficient. He states that a sufficient amount of capital has been raised to finance the company.—Oil World.

GAIN OF TWO-THIRDS IN OIL VALUES FOR 1909 ON LOS ANGELES STOCK EXCHANGE.

Of the $45,655,400 gain in values in all stocks listed on the Los Angeles Stock Exchange during 1909, oil securities furnished over two-thirds. In the latter tbe increase amounted to $32,760,000.

The increase in the price of oil whicb has advanced 25 per cent in the last year, without one cent more in the cost of production, is of itself enough of a factor to have increased the holdings of the various companies several millions of dollars, and as a natural consequence the increase in price of any crude material, being always followed by an effort at increased production, the same general law held good in relation to the oil business and all companies show much new territory opened up with larger production of oil.

"Oil shares have entered upon a period of prosperity never before witnessed in this city," said Secretary L. F. Parsons. "Prices in several cases doubled and trebled in tbe past year. Dividends also show large increase. To go into a detailed statement of the gains made in various stocks in tbe oil list during the past year would require too much time and space, but it is safe to say that on a capitalization of $160,381,026 and the average increase in price for the entire list would be at least 10 per cent and the dividends disbursed closely approximate $7,500,000."

In oils, the business done in the past year was enormous:

Amalgamated	90	70	1,430	$ 119,538.75
American Pet. pfd.	92	60	160	14,275.00
American Pet., com	76	50	2,050	143,998.25
American Crude	100	75	45,000	37,044.75
Associated	55	30	42,391	1,734,389.75
Billiken	25	15	444,000	90,672.50
Central	138	85	273,244	350,344.90
Cleveland	29	24	71,000	18,777.50
Continental	40	30	9,800	3,615.00
Elks Consolidated	5	2	43,000	1,709.50
Euclid	60	50	2,000	1,010.00
Fullerton	285	280	8,760	11,055.50
Globe	23½	16	202,625	42,395.15
Jade	32	16	74,500	12,188.75
Mexican Petroleum	133	121	8,030	9,097.50
Mexican Pet. Ltd. pfd	70	66½	747	49,841.00
Mexican Pet. Ltd com	32½	26	2,635	77,727.50
New Penn. Pet.	85	30	3,550	1,941.25
Olinda Land	40	19½	465,800	123,877.75
Palmer	145	78	39,800	31,214.25
Perseus	34	24½	5,500	1,385.00
Provident Midway	30	20	2,000	500.00
Reed Crude	35	23	213	- 72.50
Rice Ranch	120	107	9,647	11,071.20
Section Six	59	52	65,500	37,383.50
Traders	112¾	99	360	37,180.00
Union	109½	98½	16,160	1,685,848.50
Union Provident	107	97	2,374	223,569.50
United Petroleum	110	100	835	88,666.35
Western Union	152	95	115	10,805.00
Union Rights	—	—	447	43,415.00
California Midway	16	19	4,000	640.00
Blue Moon	40	27	1,000	450.00
Total			1,848,707	$5,015,728.00

Subscribe for California Derrick. $2.00 per Year.

BALLINGER RESTORES CALIFORNIA OIL LANDS.

Based on information furnished by the geological survey, 378,456 acres of oil lands in California have been restored to the public domain by Secretary Ballinger. The area of lands withdrawn previously is thought to contain in all an aggregate of 3,242,606 acres.

The President, with Mr. Ballinger's aid, is preparing a plan for the disposal of oil lands. No details regarding the recommendations can be obtained, but they will in a general way follow Secretary Ballinger's suggestions in his annual report.

"OILING STATIONS FOR THE NAVY."

Of the very greatest interest to California oil men is the dispatch appearing in the Chronicle, January 15th, saying that "oiling stations" are being considered for the navy, and that the time-honored coaling station may be done away with. This is just one more hole poked through the flimsy theory that there will be an over-production of petroleum in this State. The difficulty will be to supply the market. The dispatch follows:

"Oiling stations" for the Navy instead of "coaling stations" is one of the proposals Secretary Meyer is now considering in connection with the future of ships of war. A plan is under consideration for the conversion of the coaling station now in progress of construction at San Diego, Cal., into an oiling station, so that the ships of the Navy may replenish their supply of fuel oil should its use be adopted extensively. Several ships already have been fitted for its use, if desirable.

Representative Smith of California had a conference with Secretary Meyer today on the subject. The proposition to change the nature of the station at San Diego has delayed work there and also operated as a factor in determining the amount which Congress will appropriate for the improvement of the harbor at San Diego.

To Build Storage Stations.

The first naval oil stations to supply battleships, torpedo-boats and destroyers with oil for fuel is to be erected on the grounds of the naval coaling station in Narragansett bay, and will have a capacity of 1,000,000 gallons. Each tank will be so placed that in case of fire there will be no danger to the others. Similar stations will be built on the Pacific and Atlantic coasts, at Norfolk, Key West, Charleston, San Juan and Guantanamo.

OIL WELLS CANNOT KEEP UP TO DEMAND.

The year 1910 opens with the daily oil production 5000 barrels short of the consumption, says the Oil World.

At all stations on the Southern Pacific from Ashland, Ore., to New Orleans, there is a chronic clamor for more oil, the storage tanks being only partly filled. An interruption of the traffic over the Tehachapi mountains for a period of thirty-six hours would tie up the Santa Fe as effectually as would a strike of its locomotive engineers.

All the large consumers of California oil are leading a hand-to-mouth existence, so far as oil is concerned. The condition is rendered the more acute by reason of the extension of oil's use by more remote points. There is not a shut-in well in California where there is possible transportation for the oil. Over 500 strings of tools are running day and night in a strenuous endeavor to bring in more wells to meet the constant growing demand.

GEOLOGISTS SEEK OIL LANDS.

Within a short time the K. T. & O. (Southern Pacific) will start three separate geological expeditions on a year's search for oil lands throughout the State.

The parties are now being formed and, while the personnel is as yet unknown, it is certain that some of the railroad company's most capable geologists will make up the parties.

It is understood that the expeditions will start from Coalinga and will each go to a different section of the likely oil territory. Seven horses and three strong wagons are now in the local yards of the company, making ready for the trip. The expeditions will start shortly after the first of the year.

An exhaustive study of the oil horizon will be made, and detailed reports on all promising territories are to be returned.

While the Southern Pacific has vast territories of oil lands at its disposal now, it seems to want more and know more of what the State affords in the production of this valuable commodity.

Whether or not the company has fears of losing any of its present lands by reason of the recent activities of "jumpers," is not known. It is stated, however, in Southern Pacific circles, that the activity of the company in the field is in no way traceable to organized effort being made to secure possession of the railroad grants.

Each geological party will be made up of a geologist and assistant. It is expected that a year, at least, will be taken up with the work. Dr. C. C. Owen, who has been in Colorado during the summer, will be in charge of the expedition, it is understood.

"PETROLEUM INVESTMENT COMPANY" TO PROMOTE AND FINANCE OIL COMPANIES.

A new company has been organized for the promotion and financing of oil companies, called the "Petroleum Investment Company." It is incorporated for $250,000, the par value of the shares being $100 each. It will be a close corporation, as the entire amount will be subscribed by the members of the company before it begins operations. The Coalinga Record gives the following account of the organization and purposes of the company:

"John Baker Jr. was elected president and M. L. Requa, of the Nevada Petroleum, vice-president. There are seven directors, who are H. H. Welsh, S. A. Guiberson Jr., John Baker Jr., George T. Cameron, F. W. Bradley, of the Nevada Petroleum; Captain John Barneson and M. L. Requa. Thus far about forty or fifty prominent oil men have become interested in the company. In addition to the above, Wellington Gregg Jr., F. P. Talbot, E. De Salba, M. V. McQuigg, L. P. St. Clair, T. A. O'Donnell are among those interested. Other prominent Los Angeles, San Francisco, Bakersfield and Coalinga oil men are also interested in the company. Each director has been allowed ten shares, while the members are to have five shares each. The purposes of the company are to be in complete touch with all companies and operations in all of the fields of the State, for the purpose of assisting in financing companies needing assistance and supplying capital for the development of properties that appear to be good, legitimate investments. A staff of geologists will be maintained, together with business agents, who will be assigned to duty in the different fields, and matters coming up for consideration will receive the attention of the field experts. The company will have correspondents on the Chicago, Boston and New York stock exchanges for the placing of its investments, and will be in touch at all times with the eastern markets as well as the West. The complete organization of the company has not been effected as yet, but it is understood that another meeting is to be held in San Francisco at an early date, at which the further plans will be laid."

The retrial of J. F. Krause, charged with misusing the mails, has been set in the Federal court in San Francisco for January 24th. The case of Krause vs. the Mt. Hamilton Land and Oil Company will be called during the early part of February.

INDEPENDENT CONTRACT WITH ASSOCIATED ENDS.

Friday, December 31st, the contract entered into by the agencies for the sale of oil to the Associated Oil Company expired.

The total deliveries to the Associated for the twenty-two and a half honths (the contract having begun February 15th, 1908) over which the contract has been extended will be approximately 10,250,000 barrels, based on an approximation of the deliveries for the present month. The Agencies will have received approximately $6,500,000 from the sale of this oil.

As is well known, the contract was evenly divided as to payment, the price being 60½ cents per barrel for tbe first half and 63 cents for tbe second balf. The oil at the former price brings approximately $3,200,000, while at the higher price better than $3,300,000.

Of the fields filling the contract the Kern River leads, with almost as much again as supplied by Coalinga. McKittrick follows, with about one-half as much as that delivered by Coalinga, and Sunset brings up tbe rear with less than 200,000 barrels.

The approximate figures are:

	Barrels
Kern River	5,100,000
Coalinga	3,320,000
McKittrick	1,650,000
Sunset	180,000

The returns brought to the members in the respective fields are approximately:

Kern River	$3,199,250
Coalinga	2,068,300
McKittrick	1,035,275
Sunset	112,950

A Deficiency.

While the contract expired the last day of the year, tbe full delivery to the Associated will not be made until about fifteen days later. The first year the contract ran the agencies were short of the minimum delivery amount about 335,000 barrels and, by the terms of the contract, this shortage cannot be made up until after the final date of the contract. At the rate the agencies have been delivering to the Associated, it will take about fifteen days to fill the order.

What will be done in the way of transportation after that time has not been announced as yet. At the present time the field is in a badly congested condition owing to the inability of the Associated to care for its usual amount of oil, due to continued breakdowns along the Monterey line. The Producers' Transportation Company has been caring for more oil than the Associated during the month, the daily average of the former being about 29,000 barrels, while the latter has been taking about 26,000 barrels.

The Producers' pipe line, however, is not yet in condition to entirely relieve the Associated. Both companies are making endeavors to care for the production. By the installation of pumps at Tar canyon the Producers will be able to care for about 5000 barrels more daily on the long pump to Dudley, and tbe Associated has just completed another tank at its new station. The Producers has received a consignment of six-inch pipe to continue the work of connecting up the companies in the field.—Coalinga Record.

To Double Refinery's Capacity.

The Standard Oil Company is planning to double tbe capacity of its refinery at Point Richmond, at a cost of over a million dollars. In the Kern, McKittrick and Midway fields tbe Standard is offering 50 cents a barrel for oil at tbe wells. It has just closed a contract with the Ethel D., and the M. & M. for 400,000 barrels at that price.

MONTE CRISTO AFFAIRS.

At a recent meeting of the directors of the Montc Cristo Oil Company it was decided to retain Mr. Henry Ach as general manager at a salary of $20,000.00 a year, the number of directors was reduced from seven to five, and all directors' salaries were done away with, thus making a material reduction in the expenses of the management of the company. The directors have beretofore been receiving $250.00 per month each.

The retention of Mr. Ach at the same salary was a bone of contention among the directors, and the Hinkle brothers and Sam Shannon, heavy stockholders, fought against it bitterly. When, after balloting, it was decided that Mr. Ach should continue as manager with no reduction of salary, the Hinkles and Mr. Shannon are reported to have sold their stock on the exchange at an average of $1.65 per sbare, although it cost them $2.85 a few months ago. The market was not broken by their action and Monte Cristo seems to be as secure as ever. In order to further develop their property it was decided by the directors to levy a series of assessments on the stock, the first one of which, an assessment of 10c a share, bas already been voted.

RECENT PATENTS.

The following patents recently granted, of interest to the oil trade, are reported expressly for The California Derrick by J. N. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Drilling machine, J. W. Green, Portland, Ore., 939,907.

Casing-perforator, C. E. Lapp and W. H. Harrison, Los Angeles, Cal., 939,917.

Petroleum-burner, W. H. Eaton, Clay Center, Kas., 940,305.

Plunger mechanism for oil-wells, L. R. McCarthy and J. C. Vroman, Spartansburg, Pa., 940,347.

Well pump, W. A. McGregor, Bradford, Pa., 940,545.

Apparatus for drilling and operating wells, E. J. Fithian and Harry D. Murray, Grove City, assignors to Bessemer Gas Engine Co., same place, 940,589.

Tubular drill stem for hydraulic rotary drilling apparatus, L. C. Sands, Pittsburg, Pa., 940,733.

Oil burner, Walter Sutton, Sacramento, Cal., 940,949.

Oil-vaporizer, J. F. Malcom, Bluffton, Ind., 940,981.

Well-tubing and means for connecting sections thereof, G. A. Pittman, Deweese, Neb., 941,204.

Capping device for oil wells, F. M. Henning, Doxey, Okla., 941,452.

Process for producing a mineral-oil emulsion, Samuel Knopf, Vienna, Austria-Hungary, 941,785.

Apparatus for firing explosives in wells, L. H. Broadwater, Findlay, Ohio, assignor to The E. I. du Pont de Nemours Powder Co., Wilmington, Del., 941,852.

Pumps (2), Rudolph Conrader, Erie, Pa., Nos. 936,605 and 936,606.

Device for use in cleaning out wells, Thomas B. Hyland, Columbiana, Ohio., 936,901.

Derrick-bracing means, Frank E. Foster, Sapulpa, Okla., 937,299.

Sand-reel, Louis C. Sands, Pittsburg, Pa., assigner to Oil Well Supply Company, same place, 938,609.

Pump for wells, William H. Larkin, Butler, Pa., 938,878.

The Templor-McKittrick Oil Co., operating on the Golden west lease on the southwest quarter of section 12-11-24, brought in a good well during the early part of the month at 1110 feet. Tbe well promises to be a producer of between 200 and 300 barrels.

ORCUTT OIL COMPANY OF SANTA MARIA GAINS BY COMPROMISE.

A compromise has been effected between F. A. Hyde and the Orcutt Oil Company whereby the former relinquishes all right, title and interest held by him and his associates in the five hundred and fifteen acres on the Lompoc side of the Santa Maria field, which he had claimed with them as scrippers, and over which a suit had been instituted, to the Orcutt Oil Company, for a consideration of one-ninth of the net product of petroleum coming from the lands. There are no stipulations as to number of wells to be drilled, amount of oil to be produced or any other matters. The compromise is held to be a big victory for the oil company, which is a prosperous one, and which consists of the following persons: Ed. Bedichek, F. C. Twitchell, T. R. Finley, Joseph McDonnell and A. R. Jones of Santa Maria; Louis Kahn, A. Lehman, Sudden Estate, Julius Klein and others of Lompoc. The company is flourishing, having no debts and $10,000 in the treasury.

The Coblentz well No. 1 is down 2475 with eight-inch casing working free. The hole is in first-class condition and there now seems to be no reason why this well should not prove a paying one in the near future.

The New Pennsylvania of the Fugler tract in Cat Canyon has its well No. 1 down below the 2400 foot mark with eight-inch casing working free.

The Dome Oil Company has just received a deed of 80 acres adjoining its holdings in the Midway field. The Dome in the Cat Canyon field reports its wells as follows: No. 1 down 1600 feet with everything working nicely; No. 2 is down 2350, and as the drill penetrates the prospects grow brighter; No. 4 is down 700 feet with the drill working freely.

The Union No. 1 on the Bell tract is getting better and better every day. The well is now on the pump and producing between three and four hundred barrels a day, and every day seems to show an increase; the gas pressure at present is about 300 lbs. and the whole tendency of the indications from this well go to show that it will greatly improve both in quantity and quality of its product.

BIG SAN JOSE VALLEY DEVELOPMENT COMPANY.

For the purpose of developing oil wells in the San Jose valley of California, a company, headed by John D. Spreckels, Jr., of San Francisco, and backed by a million and a half dollars, has secured leases on over 10,000 acres of orchard and vineyard lands and has acquired options on many more. The work has been going forward quietly for nearly two years, and the recording of the leases today brought the gigantic project to a successful issue. Work will begin immediately after the first of the year and wells will be drilled at the rate of one every four months throughout the southwestern part of the valley.—Oil, Paint and Drug Reporter.

EXCURSION PROBABLE FROM SAN FRANCISCO TO OIL FIELDS.

The successful excursion of the Los Angeles men through the oil fields of the State, and particularly the invasion of Bakersfield and Coalinga by the representatives of the Los Angeles business houses, has excited the apprehension of San Francisco merchants and brokers, and a project is under way to send a San Francisco excursion through the Kern county Coalinga field.

The Merchants' Association and the California Stock and Oil Exchange are the promoters of the excursion.

There is still another reduction in Eastern oil, of 3c and 5c. California oil is traveling steadily on the upward path.

DIAZ WILL LIFT DUTY ON OIL FOR LOCOMOTIVE USE.

President Diaz will grant the request of the railroads entering Mexico, and will lift the tariff duty on oil imported into that country when the article is used as locomotive fuel.

General Diaz has not yet taken official action, but his attitude has been made known by a member of the governmental household, who has indicated that no trouble will be encountered in securing the President's sanction. As the matter has been before Diaz for some time, this is taken to mean that he has already decided to act favorably.

Such proceeding on the part of the President of the Mexican republic will be in line with the policy of his several administrations, he having lent his aid always in the advancement of business. In this particular instance the removal of an import duty would add greatly to the earning powers and to the better operation of the railroad systems of the nation, and at the same time would not affect Mexico's oil industry injuriously, for the reason that there is a home market for all the oil she can produce, and many times that amount, aside from that created by the locomotives.

Oil from outside the national boundaries is particularly needed on the west coast of Mexico, where fuel is scarce and consequently high in price. Mexican oil from the Gulf coast is out of the question, transportation difficulties standing in the way of its use. That region will draw exclusively from the fields of California, when the duty has been taken off, to the extent, at once, it is estimated, of 3000 barrels a day with a sure increase later. At the same time, the draft of roads in Eastern and Northern Mexico upon the Texas fields will relieve the pressure California oil experiences in the southwest, and our fuel will spread in that section to the extent of about 2000 barrels a day, making a total new market for California of 5000 barrels.

NEW COMPANY FOR MIDWAY AND KERN.

A new company called the Consolidated Midway Oil Company has been organized with a heavy capitalization to develop proved and wildcat territory in the Midway and Kern River fields. The vice-president and manager is J. M. Danziger. The following are mentioned as being among the organizers: M. J. Monnette, director of the Citizens' National Bank of Los Angeles; J. R. McKinnie, president of the Exchange National Bank of Colorado Springs; R. P. Davie, formerly of Colorado Springs, but now of Los Angeles; G. G. Gillette and Sidney Smith; Lee B. Durstine, president of the North American Life Insurance Company of New Jersey, and E. A. Wiltsie of New York are also heavily interested. The holdings of the company are not given other than that it owns 400 acres of proved oil lands in the Midway field, 4000 acres outside the Midway field and has an option on 4000 acres in Midway. It also intends to operate in other fields as well as in Mexico.

KERN RIVER BREVITIES.

The Santa Fe is said to have no oil in its well on the bluffs in Kern. It is down 5050 feet.

The Overland Oil Company of Kern River has a well which was finished in five days, put on a pump and is now producing from 40 to 50 barrels per day.

It is reported that the Capitol City Oil Company will drill its lease in Kern River, 10 acres formerly embraced in the Section Five Oil Company, 9-28-28. The company has two producing wells and one drilling.

The Bunker Hill lease, owned by Phillips and Lange, consisting of 260 acres, has been sold to Boston capitalists for $300,000, and will be hereafter known as the Boston Petroleum Company. Development will begin at once.

PIPE FOR NEW McKITTRICK-COALINGA LINE.

Thirteen carloads of rifled pipe for the Associated Oil Company's pipe line from McKittrick to Coalinga have arrived in the local yards. Four more are yet to arrive and fifty carloads of the same pipe are to be unloaded at Huron. Olig, the end of the McKittrick branch railroad, is the delivery point for the pipe to be distributed from that end of the new line.

Work on the new pipe line will be begun at an early date, from all appearances, although nothing is yet known about the letting of contracts, and it is not supposed that any have been closed.

The new pipe line will be sixty miles in length and will practically parallel the Producers' Transportation line. The survey is about a quarter of a mile distant from the Union-Independents combine project. There will be two pumping stations along the route.

Material for the telephone lines has arrived, and the construction of this system will be the first of the new pipe line work to be done.

The terminal of the line at this end will be the new station of the Associated on section 17. Tanks have been erected especially for the reception of the McKittrick oil, and it will then be sent to tidewater through the new carrier being completed from this field.

Work on the new Coalinga-Port Costa line is progressing as favorably as can be expected during the winter season, and it is expected to be pumping oil some time in February. One of the pumps for the local station has arrived and is being erected. The second pump is en route. At Halfway, progress on the station is slightly in advance of the station at this end. The laying of pipe is being rushed along at the upper end of the line.

ENORMOUS CORPORATION FORMED TO DEVELOP FIVE THOUSAND ACRES OF OIL LANDS IN COALINGA, MIDWAY AND McKITTRICK.

The filing of incroporation papers of the American Oilfields Ltd., a $25,000,000 oil company at Fresno, has created widespread interest among oil men and has led to speculation as to the plans of the big company.

The incorporators are E. L. Doheney, one of the most daring and far-seeing men in the oil business, president of the American Petroleum and Mexican Petroleum companies; C. A. Canfield, also an official of both companies and considered one of the keenest men in the business; J. C. Anderson, Dr. Norman Bridges and T. A. O'Donnell, all directors in the Mexican and American; J. M. Danziger and L. A. McCray.

The American Oilfields Ltd. will take over 1200 acres of oil lands in the West Side Coalinga field, in section 1-21-15 and 35-20-15, the purchase of which was announced in the California Oil World last week, and the holdings of the Midland Petroleum Company, which was organized recently by the McCray brothers, F. C. Ripley and Martin Barber, to take over the Midway Oil Company and the Cousins lease in McKittrick. The Midland Petroleum Company recently bought 3000 acres on the front in McKittrick and the northeast quarter of section 36-31-22, Midway. The west half of the same section was purchased this week by Doheney and Canfield for the American Oilfields Ltd. In all the big company will own more than 5000 acres of land in Coalinga, McKittrick and Midway.

Discussing the company, C. A. Canfield said that it would take over the Coalinga land purchased by himself and Doheney, the west half of section 36-31-32, "and other properties which we are now negotiating for, and its holdings will be developed without delay."

The large capitalization of the American Oilfields Ltd., coupled with the well known ability of the men at the helm, indicates operations on a wide scale, with possibly pipe lines and ocean-going steamers and a selling agency with ramifications extending into the big petroleum markets of the world. At any rate, there is no doubt that it will be able to take care of itself under any conditions, and to dictate the price of its product.—Oil World.

PREMIER CONTEMPLATES GREAT DEVELOPMENT.

The Premier Oil Company, now producing 50,000 barrels of 16 to 17 gravity oil monthly, the holdings of which are located in the heart of the Coalinga field, is already drilling two new wells, and has in contemplation the putting down of forty more, or one for every four acres of its 160-acre lease on Section 24, Township 205, Range 14, Coalinga. At present the company has only ten wells, which are in the shallowest part of their lease, but their average output per month each is 5000 barrels. With forty new wells completed the company expects to pay annual dividends of 100 per cent on its entire capitalization of $1,000,000.

The Premier is under the management of the Spellacys, T. Spellacy being president and P. E. Spellacy vice-president, W. M. Wallace is named as secretary. The Spellacys, J. D. Thompson, W. M. Wallace and C. J. Berry are named as the directors. So far the company has met with excellent success, and there is no reason to believe that it will not continue to do so. All the men are well known oil operators. The necessity of a great output for 1910 and the belief that prices will advance greatly during the coming year are given as the reason for the decision to commence such large operations.

SECTION SIX, COALINGA, AGAIN CAUSE OF EXCITEMENT.

An enormous gas pressure, struck by the Jefferson Oil Company in its No. 2 well, has brought the attention of everybody to the famous Section Six again. The well was drilling in the light oil sand when the tremendous roaring of the prisoned gas warned the drillers to expect and prepare for a blow-out of magnitude. All lights were put out at once to prevent any conflagration, and, as a final preventative measure, the well was flooded. The tools, fortunately, stuck in the hole and the blow-out did not occur. A gate has been put on top of the casing and the tools, which were removed the day after the blow-out, will be run through the gate to break the shell which has formed, when, upon bailing off the water, a large production is expected. There is every indication that the expected production will be had, as the well is on land adjoining the famous forty-three acres of the Section Six Oil Company, which has just declared its first dividend of one per cent.

The Coalinga Red Top Oil Company's well has a gas pressure similar to that in the Jefferson well, and the conditions are being met in a like manner. This well is also on land adjoining the Section Six Oil Company's property.

The Los-Angeles-Coalinga Syndicate, leasing from the Section Six Oil Company, is down 2310 feet with its No. 1, with forty feet of sand, the same as that from which the Silver Tip got its blow-out. The gas pressure here is tremendous, and the hole has to be kept filled with water.

While there is only one Silver Tip in the world, all three wells are expected to have big productions, and are being eagerly watched. No conservative estimates are made at all or the Derrick would report them.

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SANTA MARIA.

Considerable interest is centered in the Rossi tract well of the Los Alamos Petroleum Company, because it has reached a formation similar to that passed through by the Palmer Company just before that company struck their gusher. The well is down 2500 feet, or about 180 feet shallower than the depth at which the blue shale was encountred in the Palmer.

The Palmer's number 2 Blochman is down 2550 feet. It is at present in oily brown shale and making gas. Drillers are quoted as saying that it looks very good and they are looking for another gusher.

The Standell well, down about 3000 feet in a good sand is on the pump and in six or eight weeks, when the water has been pumped off, it is expected that a big well will be brought in. The Stendell was two years in the drilling and cost much money.

Western Union's well number 39 is producing 300 barrels of 27 gravity oil daily and making very little sand. This well has advanced the boundary of the proved area materially.

A remarkable condition prevails at the Brooks well, which is now flowing 200 barrels of heavy oil daily, through the perforated 8-inch pipe. While the drillers believe that if they can perforate the 6-inch pipe they will get a bigger well, they are unable to do so, so great is the flow from the larger pipe. The 8-inch was perforated before being put in, but the 6-inch was not. The 6-inch is much farther down and has a lighter oil which will have to be developed when the heavy oil stops flowing and not before. No one has ventured an opinion as to when the present product will cease to flow.

It is said that the Union's No. 1 well bids fair to rival its neighbor, the famous Palmer gusher. It is producing heavily.

The Los Alamos Petroleum Company's well, now down 2,500 feet has again shut off water with an eight inch and is now starting with a six inch casing. The company expects to continue with six inch casing 700 feet deeper, or about 3,200 feet. They are now in a brown shale, of a bituminous quality.

The Orleans Petroleum Co. at Cambria has made preparations to go as deep as 3,000 feet, although they expect oil anywhere from 2,000 to 2,500. At present they are doing well being already down over 400 feet.

The Beason and Bella Vista Oil Companies are drilling two wells near Red Bluff, where evidences of petroleum formations are said to have been found. Bella Vista's well is down considerably more than 300 feet while Beasons is a close follower. So far everything bears out the belief that oil will be obtained in marketable quantities.

SANTA PAULA.

Sisar Creek, in Santa Paula canon is becoming a scene of great activity. According to a report fifteen rigs have been contracted for and that there are not enough teams to haul the materials to the ground from the trains. The Paula Oil Co., has three wells drilling. The Forest City National is down 700 feet with number 14, and is cleaning out its old wells, sunk along the break. They will operate two strings of tools from now on. The Union is the principal buyer, as it has a pipe line into the field. The oil runs from 25 to 30 degrees gravity and commands a good price.

SALINAS.

According to F. J. Griffin the Salinas well, which is down 1150 feet, will be kept on the drill until the oil sand is reached and a good well brought in. This is considered to be against the judgment of geologist Ralph Arnold, who advised that work on the Salinas be stopped until well No. 2 of the Lonoak has gone entirely through the brown shale which it is now in, the development of that well being in the nature of a test as to what can be expected for other wells. The Lonoak No. 2 is down 2,500 feet, the Standard and Salinas being each in the neighborhood of 1,000 feet behind them. Mr. Arnold formerly a Government geologist, stated that he believed petroleum would be found in commercial quantities if a true sand were encountered.

PALMER GUSHER KEEPS UP PACE.

The Palmer gusher is still going about the same pace, which for the last thirty days has averaged from 1400 to 1500 barrels a day. This is what the well has settled down to as a steady thing since the bottom 4½-inch casing has been shut off by the inner tubing at the depth of 2775 feet.

This demonstrates that the oil comes in through the 6-inch casing between 2400 and 2775 feet. The regularity of the flow is accounted for by the fact that the enormous gas pressure which comes from the bottom of the hole at a depth of 3200 feet is not so strong at a depth of 2775 feet. The gravity is also conclusive proof that the oil comes from this depth, as it is one-half of one degree lighter at the bottom of the well.

No effort will be made to remove the tubing as long as the steady flow makes it dangerous to attempt to remove the obstruction.

The No. 2 well, which is only 600 feet from No. 1, is close to the 2400 foot mark and the formation closely resembles No. 1 at the bituminous shale and gas pressure. There is every indication that No. 2 will come in as a gusher when the right depth is reached.

FIELD BREVITIES.

The Salt Lake field production is about 8500 barrels daily.

The El Oso Asphalt Company of St. Louis is erecting a plant in Los Angeles and will compete with the so-called "asphalt trust."

The Alliance Oil Company has sought for wharfage privileges at Avila, and will, in all probability, resume operations at its Oilport refinery.

The production of two wells of the Murphy Oil Company in the Coyote Hills pool in the Whittier field has swelled the output of Whittier 1300 barrels daily.

The McDor operators in the Salt Lake field have a 350 barrel well. In getting this well they have proved up territory held by both the American Petroleum and the Associated Oil companies.

The Standard is quitting its activities near Altamont, near Livermore and Tracy, Alameda county, has pulled the casing and acknowledged defeat. Little or no oil was encountered in the 3000 foot hole.

In order that it may comply with the spirit as well as the letter of the law, withdrawing mineral lands from entry after September 27, 1909, the Standard Oil Company will withdraw from occupancy of all the lands now credited to it on the map, upon which it was not drilling on September 27, according to the Oil World.

Stockholders in the Elk Consolidated Oil Company allege fraud in the sale of their property to the White Star Oil Company, and have instituted proceedings against the latter company, Richard Arnez et al. in the Superior Court. The property is located in Santa Paula Canon, Ventura county, and is valued at $400,000. They demand damages in the sum of $176,655.

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Advertising Rates on Application.

EXPLODED THEORY.

Six months ago when the question of over-production or under-production of California oil was under discussion among real and would-be authorities on the subject, it will be remembered that the bugaboo of Mexican competition was trotted to the front and kept before the public as a club to induce congress to levy an import duty, says the Mining Review. Authorities who took the position that there was no immediate fear of over-production pointed to the fact that Mexico could not produce enough oil for her own needs and that, as production grew, demand must of necessity expand at the same time. That argument became the target of the over-production theorists and a great many followers of the industry were converted to their way of thinking. Since congress took its stand in favor of free oil little has been heard of the matter, but it may interest people to know that the railroads of Mexico now find that the country's production is entirely inadequate even for their own needs, and have petitioned President Diaz to permit free importations of fuel oil until such time as the production may catch up with normal demand. According to reliable advices, the needs of the national railways alone exceed 10,000 barrels a day, while the production has not yet exceeded 7000 barrels, the figures which prevailed at the time the discussion was at its height. From present advices, President Diaz will grant the request by suspending import duties and within a few weeks, instead of glutting the United States with cheap oil, Mexico will be drawing from our own inexhaustible stores. While the market on the east side of the mountains will be unavailable to us, the suspension of import duties will open up an immense field on the west coast, and it stands to reason that the benefits will belong to California to the extent in which she cares to supply the demand. The brushing away of this favorite theory of the over-productionist shows that there was ulterior motive in the alarmist cry and seems to prove that the hue and cry was raised solely in the interests of the large operators in home fields. The production of California oil, large as it now is, is by no means adequate to the normal demand that could be created at the will of the railroad companies that now exact enormous rates for its transportation.

LONG DISTANCE PREDICTION.

It is nearly fifty years since attempts to discover the oil deposits under the surface of California were first begun. There were outcroppings all over the State at divers points. The conviction that the oil would somewhere be found was very general, but the early attempts bankrupted all who undertook them. Very nearly forty-five years ago a company was capitalized to seek for oil near Santa Barbara. It came to naught, and every dollar put into it was lost, and there were a good many of them. It is thirty years since Hon. Charles N. Felton began boring for oil in Pico Canon, near Newhall. Manw wells were sunk in vain, the enterprise was about to be abandoned, when the first oil was struck. Twenty-five years ago for five or six years many attempts to touch the oil measures underlying the surface of the country in and around Los Angeles were made, and a good deal of money was sunk in vain.

Nearly thirty years ago the late James Fair undertook to compete with the Southern Pacific railroad. He built a narrow-gauge line from the mole at Alameda, running around the bay by San Jose to Santa Clara, and then over the mountains to Santa Cruz. The line now belongs to the Southern Pacific and is one of the most beautiful scenic trips in the State. At the time of constructing this road, in driving tunnels in the mountains out-croppings of oil and gas were found at many points. There was quite an explosion of gas in one of these tunnels. There was an effort made at that time to reach the oil deposit, but it was abandoned.

Just now we hear of a new attempt being made about San Jose to reach the oil deposits in the Santa Cruz mountains. So many abandoned, forlorn hopes of the past have been taken up and carried to success in recent times that there need be no astonishment felt if oil is discovered at or near San Jose. The fact is, the deposit lies all up along the coast, with outcroppings as far as Eureka.

The successful development of oil has been of great influence in enabling California to promote her industrial affairs in the past twenty years. The end of the oil fields is not yet reached, and probably will not be for a good many years to come. The territory already tried and proved, and the apparent volume of the oil in sight, are sufficient to last for several hundred years.—Los Angeles Times.

YELLOWSTONE BUYS KERN LAND.

The Yellowstone Oil Company has bought the property of the Akron Oil Company, in the southwest corner of section 20-28-28, Kern River field, for $130,000. The purchase was made from the London Petroleum Company, which bought the land six weeks ago. There are five wells drilled and a monthly production slightly over 8,000 barrels.

The Yellowstone is a good substantial company and has holdings highly valued. Aside from the acquired Akron property, which earns $4,200 net per month, or over $50,000 per year, the Yellowstone owns 160 acres in Sunset, all of which is leased on a one-sixth royalty basis, and 45 acres in McKittrick, also leased on a one-sixth royalty basis. None of the Yellowstone properties are anywhere near drilled to their capacity, and there is every chance that the company will become a much larger producer and dividend payer than it now is. A short time ago they placed a block of stock on the market to further develop their many holdings. This is considered as another instance of present sacrifice for future growth by most oil men. In a prospectus sent out Levy H. Hawley is mentioned as being preseident, H. B. Guthrey vice-president, and James R. Riggins as secretary; all of whom are well known oil men. The company is heavily financed, and has men of stability and known good character back of it.

MARICOPA TANKS READY FOR OIL.

The big receiving tanks of the Producers' Transportation Company, located out on section 28, at Maricopa, are practically completed and the pipe gang is now engaged in laying the lateral or receiving lines from the various leases to the tanks. It is expected that the Producers' Company will begin receiving oil in the near future.

VENTURA OIL DEVELOPMENT COMPANY'S WELLS GOING DOWN FAST.

Announcement was made today that the Ventura wells Nos. 1 and 2 were progressing nicely, being down over 400 and 100 feet respectively.

Genuine Revival Expected on Coast in Present Year

The Lompoc Daily News predicts that the new year will open in this field with a genuine revival in oil production and a greater revival in explontation than in most fields on this coast owing chiefly to the advantages for investment, and of marketing its production.

In no other field in the state are the oil strata as extensive in depth as on the Lompoc anticline, where the Union Oil Company in a test well proved the oil strata to exceed one thousand feet, and while the depth of the wells is greater in this district, the production of oil is also greater and the life of the well, on account of the greater thickness of the oil bearing strata, incomparable.

In Baku, Russia, where wells have been producing for over one hundred years, the oil bearing strata is of much less thickness than in the Lompoc field and this fact has stimulated the Union Oil Company and was the chief factor in purchasing an area in the district in excess of one hundred thausond acres. It is now claimed by the chief oil companies interested that this territory or district with its apparently large development has not been fairly exploited, and their prediction is that within a very few years more than one thousand derricks will be operating and in process of construction between the Santa Ynez river and the San Carlos anticline. When that time comes the vast output of oil will not be delivered at Gaviota, which requires three great pumping plants or stations, but will by gravity force go direct from the mountains to the sea through the Lompoc valley, there being not a single obstruction preventing for thirty miles, a condition not found at any other point along this coast.

With the advent of a greater development will come every convenience for cheap transportation and eliminate the expensive process employed by the inland oil fields with a much lower grade of oil.

It is three hundred and twenty miles from the Kern river fields to Port Richmond on San Francisco bay, and between these points the Standard Oil Company has laid an eight inch pipe line requiring twenty-nine pumping stations to deliver the inland product at tidewater, and in addition to this line there are others of lesser extent, all of which, by our nearness to the ocean, makes this field the most desirable for investment of any in California; competition being practically eliminated.

At no other point where development has reached the degree of certainty attained in this field, everything considered can oil bearing land be had so cheaply or on more advantageous terms; with a market at every well and with three great companies bidding for the product there is no danger of a slump in prices, no matter how great the production.

Scarcely twelve years have passed since the effective work of developing oil in the Santa Maria district, which embraces all the Northern Santa Barbara county, now being so extensively and effectively exploited and developed, was entered upon.

In that brief period nearly two hundred producing wells have been developed, with nearly as many more wells in process of construction and development.

A contiguous territory of nearly four hundred thousand acres north of the Santa Ynez river, the major portion of which has been sufficiently exploited to declare it practically proven is the work of development within the past ten years.

State Bank Commissioner Alden Anderson has declared Standard, Associated and Union Oil Company stocks and bonds fit collateral for State savings bank loans.

TEMPLOR GETS GOOD WELL.

The Templor Ranch Oil Company has just brought in its No. 10, which is nearly as good as No. 9, now making 100 barrels a day. No. 10 of the California King is doing better than 100 barrels a day, at a total depth of 268 feet.

The Reward Oil Company will not join the Producers' agency, having been forced, it is said, to sign with the Associated. The Reward intends to drill 21 wells, and has on hand material for eight new derricks.

STANDARD OFFERS 65c PER BARREL.

Non-members of the agency, whose contracts with the Associated expire simultaneously with the expiration of the agency's contracts with that company, have been approached by the Standard in an endeavor on the part of the Octopus to secure a contract for light oil for its refineries at a price of 65c per barrel. As far as is known the Standard has been unsuccessful, as the producers seem to realize their control of the situation and are unwilling to tie up with any company on a long-term contract. The offer, however, is of great importance, the advance being material, and showing conclusively what may be expected in prices during the coming months. The expiration of the contract between itself and the California Oilfields, Ltd., is given as a reason why the Standard wishes to secure contracts for oil from another source, or sources, as it is stated that those in control of the California Oilfields, Ltd., have shown no disposition to state whether or not they will renew their contract with the Standard.

EASTERN CAPITALISTS BUY SOUTH FIELD PROPERTY.

Eastern capitalists, C. A. Kerr of Chicago and G. H. Lonkey of Wisconsin, experienced oil men with extensive operations in the Oklahoma fields, have just closed a deal with the Lake View Oil Company, operating on several sections in the Ketleman hills country, whereby $50,000 has been placed in the treasury of the company for operating purposes, in consideration of an interest in the company.

Messrs. Kerr and Lonkey recently visited Coalinga, accompanied by J. M. Elwood, the well known oil man, who discovered oil in the Kern river field. They made a thorough inspection of the field and expressed the belief that the property of the Lake View Oil Company is centered in what promises to become a very extensive producing territory.

The company has been reorganized with the Easterners in executive positions, and Mr. Elwood as the vice-president. The officers and directors are C. A. Kerr, president; J. M. Elwood, vice-president; George W. Cartwright, secretary, and J. R. Baird, A. L. Heisinger of Selma and G. H. Lonkey, directors. Mr. Lonkey is also treasurer of the company.

The company will operate on an extensive scale. One of the interested parties has declared that lumber is on the ground for eleven standard rigs and these will be built and drilling commenced as soon as the necessary machinery can be installed.—Coalinga Record.

PRODUCERS PIPE LINE NEARS COMPLETION.

The last mile of the hundreds of miles of pipe line between San Luis Bay and Coalinga and McKittrick is now being laid and in a short time the Producers' Transportation Company will be carrying all the oil they can get. It is stated that the laying off of men who have been employed for the last six months has already begun, and that oil should be in process of delivery by the end of January. The product will be shipped from both the Avila and San Luis wharves to all quarters of the globe.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

Claremont No. 5 on section 24 stopped a few days before Christmas and it was feared by experts that nothing could be done with it. The bailer brought up some heavy stuff in the nature of asphaltum mixed with a little of everything else. By extraordinary effort the well was finally cleaned and put to work on Christmas eve. Christmas day she had resumed at more than her average, flowing about 750 barrels. She is a regular 200-barrel well. Naturally great pleasure is felt by all concerned.

The Zeir lease, it is stated, will shortly resume drilling No. 13, already down 900 feet, upon completion of a water well, which should be flowing by the time the California Derrick is in the press. The rig for well No. 14 is up and ready to spud in. Work will be begun immediately.

The average daily production of 65 wells in the Coalinga field, on section 24-20-14, is 8,000 barrels. This means an average for each well of 92 barrels, good, bad and indifferent. Considering the fact that many wells get out of order, sand-up, stop flowing, etc., this is a fine average. There are eight companies operating on section 24, namely, the Premier, Marengo, Euclid, Traders, Norse, Wabash and Claremont.

The Good Luck has finished the tubing on the second well and has it on the pump. The well was finished in 20 feet of good sand. No. 3 is down 500 feet, with an open hole.

It was announced recently that a new town had been platted in Devils Den on section 18-25-19, about eight miles southwest of Dudley, in a valley between Kettleman Hills and Avenal Creek. This situation is convenient to the operations of the Cosmo, Walker and other interested companies. No name has been given for the new town.

At noon on Christmas day a fire destroyed a drilling rig on well No. 1, 12-19-15, belonging to the British Consolidated. General Manager W. R. Guiberson is quoted as saying that he believes the fire to have been of incendiary origin, as none of the employees were on duty at the time the blaze started, it being the lunch hour. No one was harmed. The boarding houses of the W. K. and K. T. & O. were also destroyed on Christmas night, by fire.

Great difficulty is being experienced by the Associated in delivering fuel to the S. P. for its coast division, and it is not expected that there will be any relief before the rays of next summers sun have thawed out the cold plug of oil which has stopped the six-inch pipe between Coalinga and Monterey, consequent upon the breaking of the pipe lines and inability to get the oil started after it had once cooled in the pipe. The initial break was of such size and of so serious a nature that a great deal of time was expended in its repair and before the oil could be started running it had cooled and made the pipe inoperative. All attempts to start the oil flowing by greater pressure have resulted in new breakages and no hope is held out.

As a result nearly all the fuel being supplied to the S. P. by the Associated is being taken from the Kern River and McKittrick fields and a daily accumulation of 3,000 barrels is being placed in storage. It is probable that this will be used to fill the new pipe line from Coalinga to Port Costa which the Associated is completing.

Coalinga Consolidated has finished the work of shutting off the water on section 18, 21-15, by cementing. Drilling will be resumed as soon as the cement sets, and judging by the log of the well is now down 1,260 feet.

The St. Clair No. 1 has been deepened and fine sand of 17 gravity oil has been encountered at a depth of 1,170 feet, which is only 100 feet below the depth of the well's original reach.

The Nevada Petroleum Company's well No. 1 is showing up in fine shape.

The new line of the Coalinga Water & Electric Co., is being pushed rapidly, work being done both on the Lemoore and Coalinga ends. The necessary poles have been received lately and the line, which comes in by way of the California Oil Fields, Ltd., will be extended to all parts of the field to supply currents for lighting the camps.

The proposed Fresno to Coalinga railroad is said to be coming along nicely. It is generally hoped that work on it will begin in the near future as it would be of great benefit to both Fresno and Coalinga, much Fresno capital being invested here.

The Silver Tip Oil Co., has just declared its third dividend of ten cents per share and when the checks have been cashed the total profits disbursed in three months will have reached the sum of $22,500. The British Syndicate represented by W. F. Lay is about to purchase all the stock, the shareholders having voted to sell out at a rate of $6.00 per share, which is at the rate of $300,000 for the property. It only remains for the Britishers to deposit their money in the bank within the coming ninety days.

It is reported upon creditable authority that the Valley well which recently shut off water, has penetrated 35 feet of sand.

The Kettleman Hills, along the east slope, are witnessing considerable activity, the Lake View Oil Company which originally possessed about 160 acres, having increased its holdings to about 1800 acres. Eleven Standard rigs are to be built and operations started, says the Oil World. Oklahoma men have taken hold of the company and the capitalization has been increased from $25,000 to $1,000,000.

The Union's Lake View No. 1 has struck oil at a depth of a little more than 2200 feet.

The Baird Oil Company, south of the Lakeview, which suffered the loss of its rig by fire, is ready to rebuild and begin operations anew, the material for a new rig being at Huron.

Says the Oil World in regard to this district: "The report of the United States Geological Survey shows an anticline running southwest from the west line of the east side field, down just back of the Lakeview and the Baird. This inclines the parties interested to believe that the east side formation continues southeast, to and along the east slope of the Kettleman hills."

The Coalinga Hub Oil Company is down 1500 feet with their well—8¼-inch casing; the Little Jumbo, lying close to the west city limits, is ready to spud in; the Sierra Madre Oil

Company has materials available for its buildings and rigs, and the Coalinga National's well is 1850 feet down, with 10-inch casing. Materials are also on the ground for rig No. 2, which will be put down close to the California-Coalinga.

The Producers' Transportation Company has completed storage tanks in Coalinga, Dudley and Tar Canon, with a respective capacity of 210,000 and 70,000 barrels, and one at Antelope Valley Junction, capacity 55,000 barrels. Three more tanks are in process of construction at the junction with a similar capacity. For a time the company was unable to put their line in shape to handle the product of the agency.

With a production of 245 barrels daily from its No. 1 well, the Nevada Petroleum Company will hurry the completion of three others now being drilled.

The expiration of the contract between the Independents and the Associated Oil Company came with the last day of 1909. Mr. R. W. Dallas of the Coalinga agency, has tabulated the net and gross results of the two-year connection. His report shows as follows: That in one year and ten months the sum of $6,700,000 has been received; that Kern River furnished 5,100,000 barrels, Coalinga 3,320,000 barrels, McKittrick 1,650,000 barrels, Sunset 180,000 barrels of petroleum. That the money return was: Kern River, $3,190,250; Coalinga, $2,068,300; McKittrick, $1,035,375; Sunset, $112,950. The report also shows that unless some agreement is made between the companies the agency will have to furnish the Associated enough petroleum to fill the contract after the fifteenth of February, the date of the expiration of the contract, as it was unable to deliver the full amount of 29,000 barrels monthly during the early weeks of the contract, and as the Associated has received only 26,000 barrels lately, instead of 29,000, claiming they could not market more, though the agency has had the oil to give them. The report closes with the statement: "The agency is now in a position where it will market through the Independent Producers' Transportation line as soon as it is completed, which will be shortly after the first of the year."

Secretary R. W. Dallas of the Coalinga Agency estimates the oil held in storage on the different leases here to be approximately 930,000 barrels. The storage November 30th was 810,936 barrels. Mr. Dallas will submit a report after he has measured all the oil.

A deal in which the consideration is more than half a million dollars has just been completed whereby E. L. Doheney, president of the American Petroleum Company, purchased from Thos. A. O'Donnell, also of the American Petroleum Company, L. A. McCray, M. L. McCray, O. G. Meyers and W. L. Leland of Los Angeles, several tracts of oil land, comprising among them 1200 acres "directly on the strike of the West Side belt and touching proved and highly prolific territory." The four men from whom the land was purchased have realized over $500,000, having bought it for $23,700 no longer than three years ago. When purchased it was transferred to the Section One and Circle Oil companies. In regard to this purchase the California Oil World says: The land takes in all of section 1-24-14, adjoining section 6 on the west, comprising 600 acres; 160 acres belonging to the Circle Oil Company; being the northeast quarter of section 35-20-14; the west half and 120 acres in the southeast quarter of section 35-20-14. All of the land was owned by the Section One Oil Company, with the exception of the 160 acres of the Circle, and all is patented. There is one well on the Circle which was finished up six months ago, and which is producing 150 barrels a day. The balance of the ground is undeveloped." Just what is to be done with this territory is not stated, but the assumption is made that a company will be organized for the purpose of drilling in the near future.

The Best Yet Oil Company, section 18-21-15, is only awaiting the arrival of engine and pump to supply water from the creek for the boiler to spud in well No. 1. It is expected that within a week or so drilling will be under way.

The Gold Tip Oil Company is over 300 feet with 12½ inch casing, the Portola is over 1175 feet with 10-inch casing, and Acorn Oil Company has drilled through water at about 1200 feet and is now in a blue shale. Signs for all three are favorable and check up with the rest of the field.

On the 24th of this month the Silver Tip will, in all prabability, declare two dividends, covering the month of December, 1909, and January, 1910. The December dividend was to have been distributed on the 31st ult., but the Agency, to whom the oil goes, failed to get returns of the November delivery to the company in time to get it into the December settlement. The great Silver Tip gusher has produced since it was brought in September 2d, 90,000 barrels of oil to date. In this time the company has posted three ten cent dividends, is in excellent condition, with a surplus in the bank and has cleared all obligations. The well has now come down to an average daily run of about 500 barrels. Silver Tip No. 2 is down a little more than 900 feet with 12-inch casing. Clare Auger, secretary of the company, says that they expect at least a 500-barrel well.

The American Petroleum Company, the holdings of which aggregate 1400 acres of proven oil land, has in fourteen months produced and sold 1,600,000 barrels of oil. It is now bent on doubling its production. Ten strings of tools are running constantly, 177 men are employed, 39 rigs are up, 14 wells are to be brought in shortly, a modern machine shop is being erected, and a $4000 office building is being completed. The average daily production of 6000 barrels is to be doubled, although at present the company has in excess of 250,000 barrels of oil in storage, on account of the accident to the Monterey pipe line of the Associated. The contract between the American Petroleum and the Associated calls for the entire production of the former company up to 10,000 barrels. Increasing the production to average 12,000 barrels daily will give a surplus of 2,000 barrels daily, which, if it does not go to the Associated will have to be stored unless another contract has been entered into for all production over that going to the Associated. Nothing is known as to the plans of the American Petroleum except that they are bent upon doubling their production and that they have in Thomas O'Donnell a general manager who can do everything possible to make a company produce and pay dividends.

Edmund Burke, an attorney of Los Angeles, has filed suit in the United States Circuit Court, located in that city, for 32,000 acres of land in the Coalinga district which is valued at approximately $25,000,000. The complaint is based on the acquisition by the S. P. of lands known to be mineral, when Congress in July, 1866 granted the railroad all odd-numbered sections within ten miles of the right of way in certain limits with the express understanding that no mineral land should be acquired by the company. Burke, claiming that this land was mineral and therefor public, filed on five sections and instituted suit to get them. Since Burke's suit was filed over 75,000 acres of land claimed by the S. P. has been filed on by other parties.

The Associated Oil Company is to be absorbed by the S. P. on Jan. 18th, 1910, if the Coalinga Record is to be believed. On that day the stockholders will meet in Bakersfield and decide how soon they will get into the pool—maybe. W. S. Porter, vice-president and general manager of the oil company will resign and will become a director of fuel for the S. P. It is said that the company will nevertheless remain in the field as both producer and distributor and that the scale upon which it will operate will be greater than at present by far.

"Zed" L. Phelps will leave Coalinga about Jan. 1, for old Mexico, where he will be in the employ of wealthy oil men. Phelps has amassed a fortune in four years aggregating a quarter of a million dollars. He resigns from the boards of directors of the Coalinga Blue Moon, Coalinga Crystal and Coalinga Gem companies, as well as the general management of the Amy. He does not state for whom he will work or other particulars pertaining to his move.

STANDARD OFFERS 65 CENTS FOR COALINGA OIL.

The Standard Oil Company is offering to contract for oil in the Coalinga field at 65 cents per barrel.

Not long ago, it will be remembered, the Octopus, through its local representatives, announced to the producers of the field that it would condescend to pay 40c per barrel on daily deliveries. There were no suckers, and the offer was soon advanced to 50 cents. And now it has gone to 65 cents.

The Standard is anxious for high gravity oil, and its most recent overture to the oil men of the field is for oil of 22 gravity or lighter.

It is understood that negotiations for some contracts at this figure are under way, but whether or not they have been successfully consummated is not known.

The Standard apparently is willing to recognize that oil in Coalinga is now able to bring its producer something near the price it is worth. In the Midway, the Standard, which controls the key to the marketing situation in that field, is paying the producers but 50 cents for the same product it is endeavoring to procure in Coalinga for 65 cents.—Coalinga Record.

MIDLAND PETROLEUM ACQUIRES LARGE ACREAGE.

Nearly 3000 acres has been acquired on the front of this field by the Midland Petroleum Company, headed by the McCrays, Martin Barber, general superintendent of the oil department of the Santa Fe railroad, and F. C. Ripley. The acquisitions cover an extension of the Nacirema Yancey-O'Donnell strike, among which are the following properties: Sections 34, 18, 19 and 28 in township 29 south, range 22 east, consisting of 160 acres in the center of each section. In addition, the company has under option in township 30 south, range 22 east, sections 6, 8, 22 and 26. The Midland Petroleum Company was recently organized to take over the Cousins Oil Company in McKittrick, the Midland Oil Company, Midway, and all their holdings. The company is capitalized for $2,000,000.

F. J. Burns and associates of Santa Barbara recentiy closed a deal whereby they acquired the northeast quarter of section 8-30-23, and the newly organized Burns Oil Company now occupies the ground. Prospective development unknown.

When Yancey and O'Donnell finish a pipe line to the Lockhart lease, section 4-30-22, the Lockhart well will be spudded in; until then work will discontinue, as there is no dependable water supply.

The busiest point in McKittrick, says the Oil World, is around the half-mile post on the south line of 36-12-24, where are grouped the Monte Cristo, Ethel D., K. T. & O., and the Wellmann, all struggling to get wells down first. Ethel D's No. 2 is already doing 200 barrels a day and may be bigger than No. 1.

WESTERN PACIFIC OIL COMPANY QUITS LEASE.

The Western Pacific Oil Company, which for two years past has been working on the lease on the road to San Luis Hot Sulphur Springs, has had the casing pulled, dismantled the lease and abandoned it. Great disapointment is experienced by many, as "there was considerable outside as well as local capital" invested in the undertaking.

NOTES.

All of sections 9, 5 and 15, 30-32 and section 31, 29-22, making a total acreage of 2,560, valued at about $500.00, totaling $1,280,000.00. Aside from this territory the Espee Company has recently proven up more than a million dollars worth of oil land in other fields of the State, so that the S. P. has holdings now which were shortly ago classed as wild cat, worth over two millions of dollars—all theirs for the proving, as the land was formerly government property.

McKittrick stock shows a decided tendency to skyrocket on the San Francisco exchange, having within the last few weeks risen from 10 cents to 17 cents the share.

Operations will shortly be begun on the 40 acre tract of land adjoining the Dillon company's lease by the Shear Petroleum Co., a close corporation with 100,000 shares of subscribed stock at a par value of $1.00 each. The ground is leased for twenty years on a one-eighth royalty basis. The owners are: David Shear and J. M. Shear of San Francisco, Carl F. Bramning, H. T. Dye and D. J. Gonyer of Bakersfield, and Drew Pruitt of Los Angeles.

The Santa Fe well 2-6, on Sec. 6, is continuing to flow at the rate of 2170 barrels daily. Since reaching the sand over 75,000 barrels of oil have been obtained from this one well, all of which has been shipped and used for fuel. The oil is light, being 23 gravity, but makes no trouble. The estimated value of the oil so far obtained is about $37,500.00. The well is considered a phenomenon by all oil men.

Beginning January 1st the Twenty-Five Oil Co. will deliver oil to the Associated at a new storage tank of 37,000 barrels capacity which, together with all facilities for loading 30 cars, the Associated has provided about half a mile east of Taft. A pipe line between the tank and the Twenty-Five Oil Company has also been installed by the Associated for the delivery to the tank. The amount of oil contracted for is believed to be 4,000,000 barrels at 50c per barrel.

The Dominion, a new company, has begun operations on section 15, 21-22, land leased from the British-American Company. The British-American is comprised of A. H. Butler and associates.

The Usona Oil Co. has sold to the Sibyl Oil Co., the west half of the northeast quarter of the northwest quarter of 22-32-23, and development has already been begun, one well being drilled and three other strings projected. Much interest is taken in this new company, as Captain Barneson of San Francisco, deeply interested in Coalinga and Santa Maria, is president, and it may mean the beginning of a far greater development of that section of the field.

The Santa Fe made a discovery at 730 feet on section 22-31-22, beating the Cunningham effort to get to the sand first. There was more or less rivalry in the matter, as each company is trying to make sure of securing a final patent to the territory, and they are situated not more than 200 feet apart. The wells are in line with the north Midway strike, situated between Yancey and the proven fields southeast.

According to the California Oil World, the Yancey well on the south line of section 15-31-22 indicates a very rich strike, no less than 70 feet of prolific oil-bearing sand having been discovered.

According to a late report the C. J. Oil Company will resume operations drilling up its leases, wbicb are now not more than half drilled, although the monthly production is estimated at 32,000 barrels now. This amount is derived from 11 wells on section 12-30-21, considered one of the best in the McKittrick field.

The lease of the Cousins Oil Co. on section 18-30-28, McKittrick, has been taken over by the Midway Petroleum Company as part of the Midland Oil Company, which it has absorbed.

150 barrels of clear 15-degree gravity oil a day is the average production of the Nacirema well, better known as the "Jim O'Donnell," after the name of the company's superintendent. The oil is from upper formations, 250 feet of water-packed sand shutting off the lower oil entirely. Three more wells are to be drilled in the near future, which will go through this sand to the lower oil.

Twenty-three wells are to be drilled by Yancey & Drake and four wells are to be drilled by the Union on their front holdings. Materials are said to be arriving already in large quantities, so that no time will be lost in starting.

Report credits McCray Brothers and J. E. O'Donnell with preparation to drill a well on section six, in the northwest quarter of township 31-22. This territory is located in a direct line with discoveries in North Midway, and is farthest removed from all development so far attempted in this field.

Chas. Wier of Los Angeles has sold to a number of San Francisco people the southwest quarter of the southwest quarter of section 26, 31-22, North Midway, at $1,000.00 per acre. It is announced that a company will be formed and development will be begun on the property immediately. A well put into the top sands of the same section by the Santa Fe is said to be producing about 150 barrels daily of 14 gravity oil.

It is reported that the southwest quarter of the southwest quarter of section 26, 31-22 has been sold to M. J. Laymance of Oakland, at a price of $600. This is also reported to have been sold to San Francisco men. Who got it?

Drilling will soon be begun on section 30, 31-24, the land purchased from Al. Thackeray, Tom Kingston and others a few weeks ago by Tilman & Bendel of San Francisco. None of the five sections which changed hands at the time of the sale, namely, the first mentioned and 4, 10, 14 and 24 in 31-23, have been touched so far. The price for these tracts was $20.00 an acre, a total value of $64,000.00. These tracts, on the east flank of the Buena Vista hills, lie diagonally across the map. The price paid is considered a fair one, as nothing much is definitely known of them.

The Diablo Oil Co. has leased Sec. 26 to various parties. The southwest quarter of the northwest quarter was taken by B. A. Hayden of Bakersfield, who assigned it to the Loudon Oil Company, whose president, George Loudon of San Francisco, is said to have associated with him investors from Minneapolis, Minn. The northwest quarter of the northwest quarter was leased by S. J. Dunlop, while J. W. Jameson, J. M. Smith and J. M. Metz got the northeast quarter of the southwest quarter and, incorporated under the name of the J. M. S. Company, will proceed to developing their holdings.

Water has been cemented off on the Brookshire's No. 1, on section 24-31-25 at a depth of 2,200 feet. No. 2 has been spudded in. No. 1 is expected to bring in a big well any day from now on.

The United Oil Co., has purchased the south half of the southeast ¼ of section 24-31-22 comprising 80 acres, at $800.00 an acre. The land adjoins the Brookshire's lease. The price is considered fairly indicative of land values in the North Midway. The company expects soon to bring in a well on section 6, about 300 feet from the 2-6 of the Santa Fe; the greatest well in the State.

United's well is down a little better than 1,000 feet. It should strike the sand at about 1,410. It's lease is known as the "Hall 20" occupying the northwest ¼ of section 6,32--23. The company has lately ordered a steel storage tank of 37,000 barrels capacity and will lay a pipe line to the Standard's line 1½ miles away if it reaches any contract with the Standard. The United will from now on run 3 strings of tools.

The Standard has a big well on section 30-32-24. In one day it produced 1,000 barrels, but choked up and has been undergoing repairs since then.

An immense reservoir of light oil is expected to be tapped when the Yancey is brought in on section 19-31-22. The hole is now down 1800 feet in a white granite shall. It is said that the indications are remarkably good, the sand in the outcrop in the hills to the rear being highly impregnated with light oil.

The Fifty Oil Company, section 10-31-22, composed of Lompoc men entirely has ordered a Standard rig and is proceeding to develop its property.

It is reported that the Standard has a good showing on section 22-31-23.

The Amber, owned and controlled by Randsburg people, is down in a rich sand at a depth of a little more than 1400 feet, ten-inch casing. Very little water has troubled the well so far. The Amber was at first considered quite risky, as the field was unproven at that distance out. They have a sure thing, however, as the Santa Fe has a 100-barrel well farther out on the flat at less depth.

The Santa Fe's 2-6 has increased its daily production from 2185 barrels to nearly 2500 barrels. No. 1 of their Midway Six, rapidly approaching the sands, is being watched by oil men all over the field.

Messrs. Doheny and Canfield have purchased the west half of section 36-31-22, Midway, close to the famous Santa Fe 2-6 well.

The Hamilton Oil Company is reported to have a good well at a depth of 757 feet in the west Midway unproved field. The well is estimated at 100 barrels per day. This opens up a big unsuspected territory.

The old Midway Crude No. 2 well, now known as the Eagle Creek gusher, is flowing better than 800 barrels daily. The well was being deepened and was unfinished when it began to gush. It is close to the Santa Fe gusher and bids fair to rival it.

The United Oil Company, operating the Midway Six lease in the Midway field, has made a contract with the Standard for 200,000 barrels of oil at 65c. The oil is light and will go to the Standard's refinery at once.

Standard Oil is not yet at the mercy of the "Britishers." The recent discoveries of light oil in the Midway field gives them a chance of which they are making the best to get all the necessary oil to fill the gap caused by the expiration of the contract with the California Oil Fields Ltd. Those who defeat the Standard will have to go far and fast.

The M. & M. No. 1, half a mile from the Wellman and Ethel D., is reported a big well.

A well is to be drilled two and a half miles east of the Ethel D. and Wellman by the Golden Gate Petroleum Company, organized by L. A. Crandall.

The M. & M. and Ethel D. at Maricopa are rumored to be under option, if they are not already sold, to Capt. Curtis and associates of Oakland.

The Hawaiian Oil Company has sold its production to the Associated at fifty cents per barrel. The production of the "Crandall," its well, is unknown.

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The Bay Cities Oil Co., will pay dividends for the year amounting to $2.35 per sbare. Considering that this stock originally cost only $1.00 per share (or thereabouts) the stockholders, who are largely Pasadena men, have a pretty good tbing.

The derrick, well No. 12, and 600 barrels of oil destroyed by fire, and two men badly burned about tbe face and hands are casualities which occured in the latter part of December on the Monte Cristo Oil Co. property. It is tbougbt that a spark produced hy friction was the cause of ignition. It was considered very fortunate that the Ethel D. gusher, situated hut a few feet from No. 12, was not destroyed also.

The Ethel D. and the M. & M. have, according to rumor, sold 200,000 barrels of oil each to the Standard Oil Co., at 50 cents the barrel. It is said that the Standard forced the deal when the companies were in no position to pursue a course other than that taken.

The Ethel D. and the Wellman No. 5, across tbe road, ceased flowing Christmas day and it was several days before they were again in good working order. This is particularly noticeable as the Ethel D. is one of the largest gushers in Maricopa.

The Johnson Oil Co., which put down a discovery well in the southeast corner of section 7, into 20 feet of sand, has been reorganized and will sbortly resume work. The company has a rig up on section 18 also. In addition to the southeast quarter of section 7, the company is possessed of 120 acres in the northeast quarter of section 18, 11 north, 24 west.

Walter Snook's well No. 2, which went to water last August, and has been out of order since tben is now almost in a normal condition again. It makes no water and gusbes at intervals with more or less of its former vigor.

The Ruby Oil Company has brought in a fine well, No. 9, which has never sanded up and has been flowing 300 barrels daily since it was finished, in 300 feet of sand.

No little interest is heing taken in the development of the flat five or six miles southeast of this town. The expressed belief of almost all the oil men in the vicinity is that the Western Mineral or Santa Fe Oil Company has struck good sand, but is keeping all information in regard to same as secret as possible in order to get control of as much of the surrounding territory as it considers good. Many reasons are given for this belief but the principal and most convincing of them is the expenditure of tbousands of dollars in construction work on the property, and tbe fact that no less than three rigs are in operation at the present writing.

The Nevada Pacific, which rumor connects witb the Western Mineral, located against the San Emidio hills is also very busily engaged working tbree rigs and trying to find carpenters to put up more to work. The operations are said to be kept so secret, however, that little knowlege of what has heen ohtained can he gleaned at present.

Wells on the Amazon lease, which formerly produced from 30 to 50 barrels daily, produce now in the region of 100 barrels, after heing drilled double their former depth. This upsets the theory of a shallow field only, and deep wells are probable to be the rule from now on.

The great "Honolulu gasser" in the Buena Vista hills, has a fine showing at a depth of 2300 feet. The well is being drilled with a rotary. If the oil is reached in paying quantities another large tract will have been added to the proved area.

The Union Oil Company has drilled into a big hody of light oil sand at 2800 feet, on the Regal lease. The discovery is regarded as the greatest ever made by the Union in all its Kern county experiences.

The Carbo Oil Company, operating near Taft, will drill its entire lease. It already bas two 100-barrel wells and is drilling a third.

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Euclid Oil Co.	.50	.60
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Globe	.16	.18
Jade Oil Co.	.26	.....
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Mexican Petroleum Ltd. (pfd)	66.00	69.00
Mexican Petroleum Ltd. (com.)	26.00	28.00
New Pennsylvania Petroleum Co.	.....	.70
Olinda Land Co. (Oil)	.32	.37½
Palmer Oil Co.	1.00	1.05
Perseus Oil Co.	.25	.35
Pinal Oil Co.	.....	13.00
Piru Oil & L. Co.	.15	.....
Reed Crude	.27½	.....
Rice Ranch Oil Co.	.....	1.10
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Blue Moon	.30	.32
Brookshire	.90	1.00
Caribou	15.00	16.00
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Four	.34	.40
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Illinois Crude	.45	.....
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New Pennsylvania Petroleum	.....	.78
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The Closing of the Door

From Our Special Bakersfield Correspondent.

Probably the most important event of the year, in the oil world, was decided upon at a conference of oil men held during the latter part of January, at Bakersfield, Cal. At this meeting it was practically determined not only to close the doors of entrance to the Kern River and Coalinga Producers' Agencies, but consolidation of the two parties was also voted upon. A resolution, leaving the matter of final action to the directors of the two Agencies, favors closing the doors to all producers who have not signified their intention of joining the great marketers-to-be on or before April 1st, 1910. A further resolution shuts out any company or individual who may hereafter engage in the business of producing petroleum from joining the Agencies, unless application for membership be filed with them "on or before the completion of the first well drilled upon the property of said company or individual."

The condition of the pipe line of the Producers' Transportation Company, the amount of oil in storage in the various tanks and sump holes of the companies belonging to the Agencies, and the establishment of a great storage supply near tidewater, were also matters of importance which came before the meeting for consideration.

New light was thrown upon the plans of the Standard Oil Company, which, it was asserted, was ready to throw no less than eleven millions of barrels of oil upon the market to break the prevailing prices and once again, by that means, control the production and price of oil on the Pacific Coast.

The great moderation and temperance of the speeches made throughout the session was one of the noteworthy things to be observed. Speeches were not declamatory. They were statements of fact. Much thought had evidently been given to the situation under discussion by those who spoke. S. A. Guiberson gave the entire history of the Agencies from their inception to date. He was, in fact, one of the strongest exponents in favor of consolidation and the closed door. Mr. Guiberson was listened to intently as he is an authority, and when he stated that he believed the Midway field to be the largest so far known in the world, and that the market could be glutted with oil by its exploitation by the Standard, he created somewhat of a mild furore. He referred specifically to the recent bringing in of the Santa Fe "2-6," Ethel D., St. Lawrence, Crandall-Matson and new Standard gushers, all widely separated and proving an oil territory enormous in extent. He showed how oil had risen, under the stimulus given the market by the Agencies, from 17 cents a barrel to its present prices, and showed how the little producers who had failed to come into the opened doors had nevertheless taken advantage of the market provided by the Agencies. From these facts he drew a conclusion showing that the Agencies must now, independent of all small concerns which insist on keeping outside the fold, close its doors and do its best for its own members. He was sustained by a majority of the prominent oil men at the convention, although H. H. Welch and others made strong and able arguments against closing the doors.

Following Mr. Guiberson's speech in importance came that of L. P. St. Clair, President of the Kern River Agency, and S. W. Morshead, president of the Coalinga Agency. They were also for closing.

A committee, appointed to investigate the oil situation and the advisability of consolidation, consisting of S. W. Morshead, L. P. St. Clair, R. W. Dallas and W. B. Robb, presidents and secretaries, respectively, of the Coalinga and Kern River Agencies, will try to secure the views of all producers, marketers, transporters and consumers of California oil, in regard to the matters which came up for discussion, at a meeting to take place on March 1st, when final action will probably be taken.

A resolution was adopted for the formation of a committee of seven qualified oil men, three chosen from each Agency, and the seventh named as W. L. Stewart of the Union Oil Company, to decide upon the plan of consolidation for the two Agencies. Its report will be made at the March 1st meeting.

It was brought out that the Agencies now face an entirely new situation in that their contract with the Associated Oil Company has expired and they are, for the first time since their organization, marketing concerns. There are about 4,000,000 barrels of oil in storage at present, and, including storage tanks and ocean vessels, the Producers and Agencies have a storage capacity of about 6,000,000 barrels.

In their alliance with the Union Oil Company, in the Producers' Transportation Company, the Agencies have now become one of the great marketing concerns of the world. The Standard only, can compete with them in the West. And, as they are solely for the producer and not for the one purpose of producing dividends, the sympathy of all independent producers is with them, whether or not said producers are members of the Agencies. Public opinion, that largely controlling

factor in the present age, is likewise on the side of those who fight the Octopus.

The question of officers' salaries and the appointment of a committee to prepare a salary list was another matter disposed of by the members of the Agencies. With the submitting of the above question was a proposition for the consolidation of the two bodies.

The passage of the Smith Oil Land Bill was gracefully passed by in the deliberations of the meeting, although it was rumored before hand that some of the members were going to recommend a resolution favoring it.

While Messrs. St. Clair, Guiberson, Smith, Robb, Scofield and Wallace favored and worked their best for the consolidation and closing of the doors, H. H. Welch and associates worked no less strenuously for a delay and fought against over-hasty, ill-considered action.

About ten days after the meeting of the Agency members and other oil producers in Bakersfield, the committee appointed for the purpose of investigating the oil situation and the advisability of consolidation, gave out a statement for publication that in its opinion the "conclusion arrived at by the Independent Producers in the aforesaid joint meeting assembled, was against the preference and personal wisbes of a majority of those present and was reluctantly accepted; but that the action was finally unanimously decided upon as the result of a discussion which disclosed good and sufficient reasons for this policy."

They say that unless a new statement of facts is presented the resolutions made at the meeting January 22d, will be passed on March 1st; which date is again announced as the day for a final discussion of the affairs brougbt up at the former meeting, and to which they urgently invite all persons and members of oil companies engaged in producing in the state. They assert that they wish to be shown any method hy which they can protect themselves and at the same time get a full measure of profits, and, that the closed door should have the widest discussion and consideration. The committee, in the message, further avers that the rise in price from about 15 cents to over 50 and 60 cents is due wholly to the efforts of the Agency members and officers, and they also profess tbe belief tbat all non-members of the Agencies who have profited by those efforts should now join the source from which they have derived so much benefit. They show that their efforts have accomplisbed what was heretofore considered impossible; that they have secured independent pipe lines from every important field in tbe state, to tidewater; that the Union Oil Company of California has been employed to act as selling agent for them and that tbe Agencies are now not only producers but marketers. Their closing words are as follows:

"Again we urge that the invitation herewith extended be accepted by all to whom it is addressed. We feel confident that a thorough examination of the question at issue will terminate in the adoption of the wisest procedure and we realize that the closed door policy may be modified by the presentation of facts and views with wbich we are not now acquainted. We realize also that every argument advanced at our recent meeting was submitted by members of the organization, and hence may have been given in a spirit animated by a feeling of desire for the continued success of the organization, rather than by serious consideration of a plain business proposition. Respectfully submitted.

(Signed) "L. P. ST. CLAIR,
"S. W. MORSHEAD,
"W. S. ROBB,
"R. W. DALLAS."

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A report from Roulette, Pa., says: "Dr. James Monroe, living near Jamestown, N. Y., has conceived the idea of introducing beat into the abandoned oil wells of Pennsylvania in order to revive the flow of oil. A machine for forcing 'live' steam, under tremendous pressure, has been devised, and those who have seen it tried declare tbat it has brought to life again oil wells that have been abandoned for years. A company known as the Oil Increase Company has heen formed at Jamestown, and plans of operation and financial participation are being arranged. The company insists upon the terms being that it gets all the paraffine forced out of the wells and one-half of all the oil, thus assuring to it a most profitable dividend."

If the above experiment proves of value in Pennsylvania there is no reason why it should not, in course of time be applied to old, small producing wells in this state,

RAPID DEVELOPMENT.

No industry in history has developed as rapidly as tbe oil industry bas. None has produced so many surprises, so many quick changes, so much uncertainty, so great bazards. From the beginning it bas alternated between threatened exhaustion and appalling overproduction. Science has treated it as a "vanisbing phenomenon," while the energetic driller has followed it as a business that could have no limit. The driller has proved his case only too well, as the enormous production shows. In the face of constant prediction of mous production shows. In the face of constant perdiction of the approaching end he has developed a production of more than three-quarters of a million barrels a day—in fact, is nearly half way betwcen that point and the million-barrel mark.

Represent Three Phases of Oil Industry

W. D. MALTMAN, YOUNGEST AND MOST ACTIVE MEMBER CALIFORNIA STOCK AND OIL EXCHANGE.

Among the men the recent phenomenal developments in oil have brought into prominence is W. D. Maltman, junior member of the firm of Hopkins, Maltman Company, successors to J. P. Hopkins, members of the California Stock and Oil Exchange and the San Francisco Stock and Exchange Board. Mr. Maltman has been five years "on the street" and is looked upon as the best posted broker on oil and values of oil property, in San Francisco. The firm of Hopkins-Maltman Company represents the largest traders in the market and has been recognized as the leader in recent large transactions on the oil board, sucessfully manipulating deals of great magnitude. Mr. Maltman is, also, a writer on questions involving the progress of oil development in California, and his statements are taken as authority.

"HONOLULU GASSER" PROBABLY A GUSHER.

The so-called great "Honolulu Gasser," filled with mud to a depth of 2650 feet, continues to force high gravity oil to the surface. L. A. Crandall, says that he believes he has a fine well of light oil, and that, although the pressure of the mud must be all of 1500 pounds per square inch at the bottom of the well, he is afraid that he will be unable to complete the necessary work upon it before the mud is blown out.

LEWIS E. AUBURY, CALIFORNIA STATE MINERALOGIST.

Mr. Aubury, who has been prominent in his present capacity for years, is the very highest authority in matters pertaining to mineralogy in this State. In a statement recently made to the editor of the Derrick, Mr. Aubury said:

"In regard to the oil fields of this State, I believe them unqualifiedly, the greatest in the world. In order to give a correct idea of the fields the Bureau has two men now working, who will plat out maps of every oil district in the state. As soon as the maps have been compiled they will be issued. These maps will show the location of every hole ever drilled, now productive or non-productive. The data accompanying these maps wil lbe published in the regular bulletin. We will attempt to show the ownership of every parcel of oil land in California. Marks will be made on productive wells, wells drilling and where active operations are being carried on.

"There are many legitimate operators who have meritorious propositions and who should be aided, but who find it difficult to dispose of stock for the purpose of obtaining money to operate. This class of operators are greatly harmed by 'fakers,' and it is to aid those who are willing to work legitimately that the Bureau proposes to do what it can by getting data."

It is probable that Mr. Aubury will contribute articles of a scientific nature for publication in this magazine in the near future.

FUEL OIL DISPLACES COAL AND COKE

From United States Geological Survey Bulletin.

Several influences retarded the growth of the coal-mining industry in New Mexico during the year. Coal mining in New Mexico is largely dependent on the copper mines and smelters and the lead and zinc mining industries of the Southwest, which produce not only these metals but also gold and silver. The rather dormant general industrial conditions in the early part of the year restricted the demand for copper from the mines of the Southwest and reduced the demand for coal and coke produced in New Mexico mines and coke ovens. Another obstacle was the competition of fuel oils, oil from Oklahoma and Texas replacing coal as fuel on fully 3,000 miles of railroads on the Pacific Coast and in Texas and throughout the Southwest and invading the coal and coke market at the copper-smelting plant at Cananea, Mexico. Oil from California fields was used as fuel on the Southern Pacific Railroad from San Francisco and Los Angeles, Cal., eastward by way of El Paso, Tex., to points where the oils of Texas and Oklahoma were used for replenishing the supply of the locomotive tenders. On the Atchison, Topeka and Santa Fe Railway, oil was used from the Pacific Coast to Seligman, Ariz. This competition of fuel oil with coal will continue for several years and must be considered in calculating the future production of coal from the mines of the Southwest. The Survey Bulletin further remarks: "The use of oil locomotive fuel has also decreased the amount of coal mined for domestic use."

UNION OIL COMPANY PRESENTS YEARLY STATEMENT

During the early part of the month the Union Oil Company presented its annual statement to stockholders, showing an enormous amount of business transacted the past year. Following are the figures given in the statement:

Net profits	$2,655,176.69
Increase over 1908, in net profits	32,243.83
Gross earnings	9,678,339.34
Total expenses, including depreciation	7,032,162.66
Total dividends paid	1,477,767.50
Total surplus	1,177,409.18
Rate per cent of net earnings on outstanding stock	10 8-10
Total number of outstanding shares, Dec. 31, 1909	251,306
Par valuation of said shares	$25,130,306.00
Total number of producing wells owned by company, December 31, 1909	302

Other statistics of the company given as below:

Tankage:

	Barrels
Union, December 31, 1909	3,647,000
Increase over 1908, 10½ per cent.	
Producers Transportation Company, December 31	1,920,000
Total tankage for two companies	5,567,000
Total increase in tankage, 68.7 per cent, or	2,267,000

Pipe Line:

	Miles
Miles owned by Union Company December 31, 1909	412.19
Increase over 1908	27.11
Miles owned by Producers Transportation Company	200.30
Increase in Union's pipe line mileage, owing to its large share in Producers Transportation Company's line	227.49
Or 59 per cent.	

The total number of acres possessed by the company, the mineral rights fee, mineral locations, etc., of the company, were also given. The Union enjoyed the greatest year in its history.

Oil Scene in the San Joaquin Valley

Notice was given the Derrick on the day after its last publication, of the payment on January 10th of the usual quarterly dividend by the Continental Oil Company. At the annual meeting of the same the following officers and directors were elcted: A. D. Elwell, president; L. W. Meyers, vice-president; C. E. Price, secretary and genral manager; W. H. Allen, Jr., and D. C. Sullivan, directors. It was also voted at this meeting to change the date of the annual meeting to be the third Tuesday in January of each year, and the board of directors was authorized to take immediate steps to have more wells drilled on the company's property at Bakersfield.

ASSOCIATED

Active control of the Associated Oil Company was assumed by the Southern Pacific on the 11th of February, when a reorganization of the directorate of the Associated was effected. Four new directors were appointed and new officers were elected. The new directors who will represent the Southern Pacific interests in the Associated Oil Company are: John C. Kirkpatrick, manager of the Palace Hotel Company; R. P. Schwerin, vice-president and general manager of the Pacific Mail Company; Rudolph Herold, Jr., insurance broker and

realty holder, and Paul Shoup, of the Southern Pacific law department.

The personnel of the new directorate is as follows: W. F. Herrin, who becomes president in place of J. A. Chanslor; W. S. Porter, who will continue as vice-president and general manager; O. Scribner, who will continue as secretary and assistant general manager; J. A. Chanslor, who assumed a directorship in making way for the presidency of Herrin; Burton E. Green, a Los Angeles capitalist; Frank H. Buck a prominent fruit grower of Vacaville and who has been interested in the oil industry for several years; E. T. Dumble, oil geologist of the Southern Pacific Company, and the four new appointees.

It will be remembered that the Associated has been for a long time under the management of a board of trustees. This trusteeship was effected by common consent at the time the company was formed by the amalgamation of a number of smaller concerns, and continued until a few weeks ago. The trusteeship was then dissolved by a common vote of stockholders and the Southern Pacific, which has held the controlling interest under promise not to exercise same until such action was taken, assumed control.

As was announced in the last issue of the Derrick, the Associated will still be managed as a commercial company, and no changes will be made in its policy for some time, according to the statement of the Southern Pacific. Transporting and selling oil will continue.

Oil Scene in Ventura County

REPORTED STRIKE IN SANTA YNEZ MOUNTAINS

Workers in the water tunnel now being constructed in the Santa Ynez mountains for the city of Santa Barbara, are reported to have made a rich strike of oil bearing sands a few weeks ago and to have kept the fact a secret until they had filed mineral claims on a big slice of the mountain, which belongs to the United States, being a part of the Santa Barbara forest reserve. The sand was struck 1,400 feet from the surface of the mountain. The finding of this sand is said to prove that the oil bearing zone extends farther up the Santa Ynez valley than was generally believed. Our correspondent was unable to state as yet whether any move has been made to erect derricks and spud in wells, not having actually been to the scene of the discovery. The report of the strike is apparently well founded, however, and a new district may be said to have been opened.

ASSOCIATED'S MONTEREY LINE OPEN AGAIN

The Associated's Monterey pipe line is again running, transporting between 13,000 and 14,000 barrels daily, 7,000 barrels of which are said to be coming from the American Petroleum Company. The Associated did not at first care for any great amount of Agency oil, but left that to the Producers' Transportation Company's line. It will be remembered that the Southern Pacific was said to be hard put to get oil enough for daily consumption upon the breaking of the Associated's pipe and that most of their fuel was obtained from Kern river while oil piled up in tanks and sump holes of the American Petroleum and other companies at Coalinga.

DEEP WELL GETS OIL.

An unconfirmed report from Los Angeles states that the Union's Rosemary well has struck oil at a depth of 5400 feet. No one can say how great the quantity is as the water has not yet been drawn off. Work is nearly at a standstill.

MIDWAY EXPANSION

S. A. Guiberson, Jr., declared recently that the Midway field promises to be the greatest in the whole world. He states that the field is twenty miles in length and from four to five miles in width; that he fears an overproduction in case it were to be greatly developed. What Mr. Guiberson says is worthy of the greatest attention and will undoubtedly be received with no little consideration by all producers of oil in this state. Opposing Mr. Guiberson, however, is Thos. A. O'Donnell, who states: "The production of Midway, to my mind, will not materially affect the market within a year or two. We need more oil and need lots of it." Midway is fast producing the necessity. Perhaps Mr. O'Donnell has not lately visited the fields. Following is Mr. Guiberson's statement, in part:

"Here is a strip of country twenty miles long and from all indications possibly four or five miles wide that has every indication of being the largest field in the world. Black, oil-covered derricks lie along the croppings from 750 feet in depth out into the flat one and two miles, at depths still under 3000 feet, and some of these wells flowing from 1000 to 3000 barrels per day each.

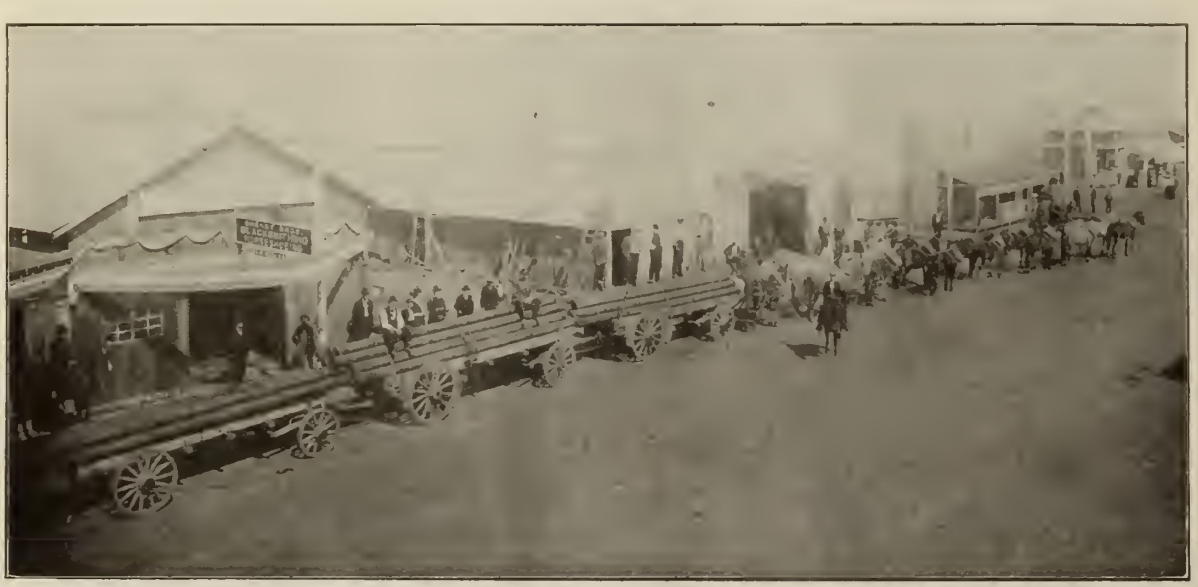
If the large wells were in one spot it would not look so threatening, but in the north end is the Santa Fe flowing over 2000 barrels per day regularly; the Midway Crude which promises to be equally as big; the Crandall-Matson wells which promise to be even larger, over half a mile further out. Along the formation a mile or so is the St. Lawrence flowing 1000 barrels or more per day, and at Maricopa the Ethel D. doing over 1000. Then out further in the flats the Standard claim over a 1000 barrel well and the black derricks all over this twenty mile strip, showing the oil has flowed clear over the derricks, makes one think this the largest oil field in the world and its possibilities make one sick at heart for the unorganized oil producer."

In addition to those producing wells mentioned by Mr. Guiberson there are dozens of smaller and less heard of wells producing all the way from one hundred to five hundred barrels. Literally dozens. Mr. Guiberson is one of the strongest advocates of the "closed door" policy now being considered by the Independent Agencies of Coalinga and Kern River. The memory of the days of 12c.-per-barrel-oil is still fresh on his brain and it is bis belief that if the Agencies do not unite and hold the price of oil up, the Midway field will give the Standard Oil Company the great chance which it is said to be seeking—to demoralize the oil market and place all independent producers within its power by getting a great over-production from the newly discovered sources.

The Standard Oil Company is declared to believe Midway greater than Coalinga, and to base its hopes for future cheap oil on its possessions and contracts there.

AMERICAN OIL FIELDS

An option on four hundred acres of land on section 14, 31-22, two and one-half miles northwest of their present operations has been obtained by the American Oilfields Company at a valuation of one thousand dollars an acre. Three hundred and twenty acres of this land is owned by the Bear Creek Oil Company of Lompoc. Mr. Tom O'Donnell, field manager for the American Oilfields, is said to have ordered an air compressor from Los Angeles which is to be installed on section 16, 32-23 where the company has a water well. A four-inch pipe will be laid from the wells to the company's camp on section 36, 31-22, where six wells are being drilled. It is rumored that 96 wells will be drilled on the Kern River lease of the company.



Sixteen-Mule Team Hauling Out Pipe

PORTERVILLE DISCOVERY

Oil indications have been discovered in the Porterville orange district. C. B. Tibbins and S. B. Shoup, men interested in the newly opened orange lands in the Ducor country are said to have found unmistakable oil indications at a depth of 150 feet in a water well they were drilling. It is stated that a heavy rig has been ordered and that a hole will be drilled to a depth of 2,500 feet if nothing is discovered before that depth is reached.

Subscribe for the California Derrick, $2.00 per year

QUARTERLY REPORT OF LUCILE OIL COMPANY.

The quarterly report of the Lucile Oil Company has just been printed for distribution to the stockholders. The report, which shows the condition of the company at the end of the quarter on December 31, 1909, is submitted by James M. Robertson, president and manager, and James R. Davis, secretary and is as follows:

Total assets	$250,120.30
Liabilities	250,120.30

Operating Account.

Sale of oil	$ 31,034.90
Discount received	116.90
Total	$ 31,151.15
Maintenance	$ 3,051.36
Net income	28,099.79
Total	$ 31,151.15

Disposition of net income is as follows:

Development	$ 11,587.04
Improvements	1,615.95
Tools, implements and machinery	533.54
Dividends	5,340.88
Interest	2,066.38
Fixed charges and expenses	78.20
Reserved for betterments	6,877.80
Total	$ 28,099.79

Oil Sold.

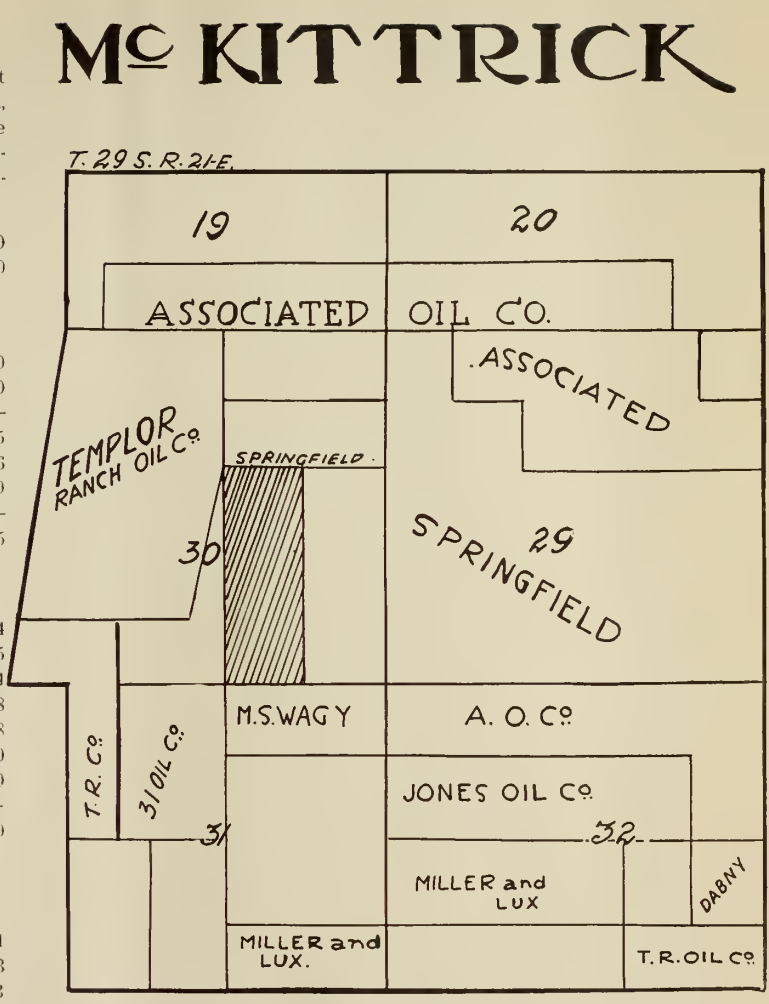
	Barrels.
October	27,335.81
November	12,724.03
December	13,425.93
Total	53,425.93

PETROLEUM INVESTMENT COMPANY.

Latest news in regard to the Petroleum Investment Company, recently organized to promote and finance other companies in developing oil lands, is to the effect that offces will be opened in Bakersfield and Los Angeles, headquarters being at San Francisco. Following is a list of officers elected at the recent meeting:

John Baker, Jr., president; M. L. Requa, vice-president; Directors—M. L. Requa, John Baker, Jr., S. A. Guiberson, Jr., H. H. Welsh, F. W. Bradley, George T. Cameron.

One of the most remarkable events in January was the tapping of a reservoir of gas at a depth of about 650 feet by the Unity Oil Company's uncompleted well No. 2, at Coalinga, and the terrific fire ensuing. The fire is acknowledged to be the largest in the history of Coalinga as well as the fiercest and most spectacular. The flame was similar to that from a Bunsen burner in shape, was over 100 feet in height and four feet through and was of a peculiar gassy blue color, the top being pinkish. When the sand was struck the tools were vomited high in the air, three explosions followed in quick succession, causing chimneys to topple and window panes to crash, and the gas, igniting, sprang into flame which consumed the derrick entirely within 20 minutes. It is asserted that Coalinga will probably have gas for domestic uses if such another well can be obtained.



Map Showing Holdings of Templor Ranch Oil Co.

TEMPLOR RANCH ENTERS AGENCY.

Reports from Los Angeles say that the Templor Ranch Oil Company has decided to enter the Agency fold. The property is to be connected with the Independent pipe line by a 4-inch lateral two miles in length. Templer's tanks are filled to overflowing and work has been started on a 50,000 barrel reservoir. It is estimated that there is no less than 15,000 barrels in storage at present with 800 additional barrels piling up daily. In addition to the work on the new reservoir it was recently learned that two new air compressors and a battery of 100 H. P. boilers have been ordered for installation. The Oil World says:

"The California King, leasing from the above company, and lying south, has completed its No. 1 within 300 or 400 feet of the Templor Ranch No. 7 at 287 feet depth, and is now finishing No. 2 and sending out material for three more rigs. The Dillon, another concern leasing from the Templor Ranch, and lying about 300 feet south of the King, has drilled its No. 1 into the sand. The Templor Ranch is installing a battery of three 100-horsepower boilers.

The California King and the Dillon are extending the development to the south along the croppings on which the Templor's shallow wells are located. The Dillon is on slightly higher ground.

Templor Ranch's No. 9 is now making 125 barrels daily. It came in but a few weeks back with a production rated about 85 barrels per day. The Templor Company is doing excellently, having a number of other good wells.

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The Oil Authority of the Pacific Coast.

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What the Eastern Oil Magazines Say About Oil and the Tariff.

Dealing with the oil situation in the East and the death of a large part of the export trade between France and the United States, in a caustic manner, the Petroleum Gazette, of Titusville, Pa., lays the blame entirely on the Payne-Aldrich tariff law, saying in part:

With reference to the situation in France through which American oil is subjected to such a prohibitive duty as practically to shut it out of that country for the present, it is to be remembered that it has had nothing to do with the conditions which for some time have been unfavorably affecting the markets abroad. Neither has it had any relation to the laws of supply and demand so far as they have any exercise in the oil business. It is due to French resentment against our new Payne-Aldrich tariff law—not on account of its oil provision, which places petroleum on the free list,—but because of other features of the law.

It is up to the statesmen who framed this law either to show that it will extract other benefits from France which will justify the loss it imposes on the American oil business, or to promote such conditions, reciprocal or retaliatory as will give our oil a show in France,—if not as good as under the trade treaty which recently expired, then the best that may be had under our present tariff law. The fact that in this law petroleum is placed on the free list does not represent any concession to France, as France is not an oil-producing country, and it will have to be along other lines that oil will be included in reciprocal relations. This will be measurably true also as to most other countries in which tariffs affecting American oil may be charged under our present tariff law.

It is to be regretted that in adjusting this oil tariff matter the statesmen at Washington cannot have the counsel and co-operation of more senators and members of congress from oil-producing sections who know and care something about the oil interests of the country, and who have been elected on their merits, rather than through the hide-bound partisanship which elects a candidate simply because he secures a nomination from the dominant party in the district, whether it be Republican, Democrat or otherwise. The oil men in such districts cannot have any reasonable cause to complain who permit themselves to be deluded, on the score of party regularity, into electing and re-electing representatives who never were known to initiate or join in any legislation for the benefit of the oil interests of the country, but who soothe their dear constituents with the introduction of an occasional bill for a postoffice site, a federal building, a home for the feeble-minded, or some other sop from the appropriation pork barrel, the meanwhile permitting the oil interests of their respective districts to be robbed of enough every year to erect dozens of such buildings as those to which their appropriations, or rather proposed appropriations, relate. Many oil men have had their eyes opened in this respect, but they still have plenty of room for company

California is fortunate in having a mammoth home consumption. While foreign markets are welcomed, they are not an actual necessity.

NATURAL GAS IN CALIFORNIA.

Out of a total gas production valued at $54,640,347 in the United States for the year 1908, California produced only $307,652, according to the report of B. Hill in the statistics given the government by the Geological Survey. This amount, however, is almost double, or at least lacks only $36,784 of being double the value of the product for the year 1907. The stride is obvious.

Now come the gas blowouts on section 6, Coalinga, with a heavy pressure; so heavy in fact that the tools are blown many feet above the derricks. Comes also the terrific blowout of the Coalinga Unity, and the pillar of flame which was estimated to be no less than 100 feet in height and four feet through, attests the pressure here. The Standard, too, has a great gas well; the now famous "Honolulu gasser" likewise indicates what may be expected of wells in the gas belt. Midway, Sunset, McKittrick, have a general strong pressure in almost all wells drilled. But the largest pressure is said to be from the Amalgamated's well on the Wolfskill Ranch. It is the belief of Mr. Fred Ripley that the entire West Side fields overlie a gas belt enormous in extent and value.

It is a well known fact that many camps are now lighted and heated likewise by their gas wells. The product is piped off as soon as a cap has been placed on the well and no difficulty is experienced thereafter. Blowouts of a serious nature are now looked and prepared for when the wells gets into the oil sand. There is no reason why, in the course of time, the piping off of gas to cities for general use should not become common, in case the Ripley idea is proved.

A NEW FIELD OPENED IN CANADA.

Whether or not a new field in the far North will in any way hurt the market for California oil is problematical. The Derrick is inclined to believe that it cannot possibly affect our market to any great extent (for some time.) However, the immense fields of Canada, in the vicinity of Fort McMurray are to be opened with every chance, apparently, of a great production.

The Athabaska Oil and Asphalt Company has been formed at Winnipeg with a capital of $5,000,000 to carry on extensive operations in the new field. More than $200,000 has been spent in developing the scene of the company's operations and eight wells are said to have been drilled which have excellent flows. As usual, an "expert" believes that this may be one of the "richest fields on the American continent." What it is remains to be seen. American and Canadian capital controls the new company.

More and more attention is being given the oil fields and oil industry of California, all over the United States. At best a dozen new journals have been started within the past six months exclusively devoted to the oil situation in this state. While many belong to corporations and are solely for the purpose of interesting capital which will go to develop various properties in the different fields and incidentally to swell the pockets of the promoters, others are purely to supply the demand which interest in the oil situation has created throughout the entire country.

Among the publications to print special oil news, although they are interested primarily in mining, are the Los Angeles Mining Review and the Daily Mining Record of Denver. That both of these mining papers are helping to interest capital by their excellent and impartial reports of conditions in the oil fields, there can be little doubt. Lately, considerable space has been given by both publications to Coalinga. The articles have been illustrated with clear, fine photographs, interesting enough in themselves to claim the attention of the most casual observer. While the pictures are excellent, the method of presentation is, if anything, superior to them. Congratulations are due the managements in initiating the step which they have taken.

THE BOULDER FIELD.

Since oil was first discovered in the Boulder, Colorado, field seven wells have been drilled at a cost of approximately $350,000. An estimate of this year's production is about 400,000 barrels, which at a valuation of $1.50 per barrel amounts to $600,000, or almost $2 returned for every one expended in drilling in this field. About one-third of the wells drilled have been producers. In the above estimate of money expended in drilling no account is made of wells which failed to reach 2000 feet, as there are no producers of mention which are under the figure. There are now five wells being drilled, two by the Inland Company, one by the Boulder-Greeley, and one each by the Fidelity and Colorado Refining Company. The coming year promises much activity in the field. The product of the wells is refined locally, two refineries constantly operating.

JOHN F. KRAUSE FOUND GUILTY.

John F. Krause, the erstwhile promoter of the Mount Hamilton Land and Oil Company, who is alleged to have lived a gay life on other peoples' money, was found guilty on his second trial, February 3rd, in the United States District Court, of having used the mails in an attempt to defraud. It is said that Krause obtained $80,000 from credulous stockholders who were mostly members of the Dunkard religious colony of Pennsylvania. Charles F. Madera, formerly associated with him, learning that the funds which Krause obtained were not being used for the benefit of the stockholders of the company, gave damaging evidence against the promoter. It is said that this will give a quietus to the operations of other irresponsible financiers, and it is therefore considered as very beneficial to the promoting business in general.

OLD ROUMANIAN WELLS.

"Oil wells, dug by hand over a century ago, that still produce a hundred barrels a day, are to be found in the oil district of Roumania," said V. W. Shoemaker, formerly a resident of Findlay, Ohio, who has spent six years drilling wells in Roumania, for the Standard Oil Company, and has returned recently to visit relatives in this country. Continuing he said, "the old records of the priesthood show that crude oil was highly prized by the Roumanian natives 300 years ago and used as a fuel and for tanning hides, being found bubbling up out of the ground in springs. Later the supply giving out, wells were sunk by hand three feet square, sometimes to the depth of 600 feet, cribbed with wood as they were lowered, often taking three years in construction. The oil was brought up in kegs by means of a perpendicular windlass operated by a horse, one keg going down while the other was being raised. As much as a hundred barrels a day could be produced in this way. About six years ago the Standard Oil Company was attracted by this field and sent out a group of men with a modern outfit to test the possibilities of the Roumania region. Success met them at the start. One of the first wells drilled was a gusher, which spouted crude oil and sand for days and flooded the surrounding country, 250,000 barrels being saved by the erection of a temporary dam."

THE EXPORT OF AMERICAN PETROLEUM PRODUCTS.

In spite of the fact that all shipments to France have now been cut off by reason of the new tariffs imposed, American exports of petroleum are all round very satisfactory. For instance, according to the statistics for the November shipments, it appears that the figures reached for the corresponding month a year ago were exceeded by more than 29,000,000 gallons—a most creditable record. The total value of the exports for the month were also ahead of those for the corresponding month of 1908, though, of course, not in the same proportion, a fact which shows that though American oil still maintains its hold upon the major portion of the markets of the world, a greater amount of competition has to be met, and consequently lower prices accepted. The official figures for the eleven months' exports show the total as being 1,374,934,019 gallons of a value of $91,715,167, as against an eleven months' export during 1908 of 1,353,914,466 gallons, valued at $97,147,990.—Petroleum Review.

PREMIER WILL PAY BIG DIVIDENDS.

During the past few days it has been stated many times by one of the largest stockholders of the Premier Oil Company that the company will pay a monthly dividend of one per cent not later than April and that this will be increased to two per cent monthly by June.

The Premier is erecting two 3000 barrel gauge tanks along each line of its property, and expects to have them in operation in the near future.

The Coalinga Unity No. One is again on the pump after having been redrilled. They expect to make a 150 barrel well.

NEW AGENCY MEMBERS

The following new members were elected to th Independent Producers' Agency of Bakersfield at the meeting held recently: A. W .Mason, Akron Oil Company; W F. West, American Crude Oil Company; D. S. Ewing, C. J. Oil Company; Don C. Porter, Del Rey Oil Company; T. Weisendanger, Denver Oil Company and Michigan Oil Company; F. C. Berry, E. P. T. Oil Company; J. H. G. Wolf, Exploration Oil Company; J. M. Danziger, Emerald Oil Company; W. J. Roberts, Eldorado Oil Company; J. P. Fox, Fox and Garrett; H. L. Black, T. M. Hodgens, Poinsetta Oil Company; A. Weill, Jewett Oil Company; J. Goldman, Junction Oil Company; S. P. Wible, Jackson Oil Company; W. A. Ferguson, Knob Hill Oil Company; John Robertson, K. R. Oil Company; G. G. Gatch, Los Angeles Kern Oil Company; C. J. Berry, P. H. McCutcheon, McCutcheon Brothers; George W. Walker, Olig Crude Oil Company; C. E. Price, Pricewell Oil Company; Walter Snook, H. R. Peacock, Tejon Oil Company; H. W. Thomas, Twenty-three Oil Company; E. H. Loveland, United Crude Oil Company; J. B. Wrenn, Wrenn Oil Company; D C. Welch, Overland Oil Company; W. L. Stewart, Union Oil Company; H. A. Jastro, St. Clair and Jastro, M. and S. Oil Company, Caloma Extension Oil Company; J. H. Raney, Rambler Oil Company; H. U. Maxfield, San Francisco, McKittrick Oil Company; W. T. Sesnon, Sesnon Oil Company.

The personnel of the Agency prior to the meeting was as follows:

L. P. St. Clair, Calloma Oil Company; F. N. Scofield, East Puente Oil Company; D. W. Carmichael, Acme Oil Company; A. H. Liscomb, Alcides Oil Company; E. E. Jones, Lackawanna Oil Company; Timothy Spellacy, Illinois Crude Oil Company; C. C. Bowles, Mecca Oil Company; M. C. Parker; Thomas Scott, Potomac Oil Company; E. J. Lawton, Vesta Oil Company; O. Scribner, Sterling Oil and Development Company; Isaac Bailey, Amazon Oil Company; A. K. Nash, Revenue Oil Company; M. V. McQuigg, Euclid Oil Company; A. J. Wallace, Globe Oil Company; Leonard Merrill, Merrill Crude Oil Company; H. S. Bridge, Enterprise Oil Company; W. M. Mead, May Oil Company; W. B. Robb, Nevada County Oil Company.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA

Secretary Dallas of tbe Coalinga Agency, gave out the official figures of the oil in storage at Coalinga at tbe recent meeting of the Agencies in Bakersfield. Owing to the Associated's failure to take the oil there was, on January 1st, about 950,000 barrels lying in sumps and tanks. Loss on oil in sumps is computed at from 10 to 15 per cent.

The new rifled pipe line of the Associated is completed and delivering oil to tbe Mendota terminus. A special kind of pump designed by engineers of the Associated Pipe Line Company is being used to force the oil on its long journey. The puump is of the triple expansion variety. The capacity of the new line is 20,000 barrels daily.

Seven triple expansion pumps of the variety used to supply oil to the rifled line between Coalinga and Mendota, have been ordered for the Port Costa, and Coalinga-McKittrick line which is now about to be built.

The traditional "break" idea is considered routed by the obtaining of a well on Section 28-19-15, by the Standard Oil Company, in the so-called "heart" of the "break" between the east and west side field. The well is only 1700 feet deep and is said to have a 250-barrel production and to be in 250 feet of sand. The Empire's 40-barrel producing well, the next well west, is also said to have aided in dispelling the "break" theory Two more rigs are to be built on the Empire immediately and a company is now in process of formation by S. A. Guiberson Jr., and H. A. Whitley, who owns the northeast quarter of section 32-19-15, (80 acres), and the land will be developed immediately.

The Caribou Oil Company makes one of the nicest showings of a year of handsome and almost phenomenal oil successes. The production for the year from nineteen wells was 701,268.96 barrels, nearly fifty-eight and one-half tbousand barrels per montb. The company paid twlve dividends totaling $242,109. $65,000 was expended for improvements. The company has a long term contract with the Associated at a low price and a short term contract with the Standard at 65c per barrel. It is in an excellent financial condition.

The Mexican Petroleum Company of California, Mexlcan Petroleum Limited of Delaware, and American Petroleum, all companies of which E. L. Doheny is president, have paid for January, dividends as follows:

Mexican Petroleum	$ 87,514.68
Mexican Petroleum Limited	78,562.66
American Petroleum	126,000.00

The Coalinga Alladdin wbich had just been put on the pump after being finally completed, broke loose and gushed out a thick stream of oil. It is said that it is probable the well may rival the Silver Tip. But that is not verified.

There is a general entanglement in the affairs of the Great Divide Oil Company. As a result general cbarges of unfair dealing against tbe stockholders of the company are made in a complaint filed in the local court by Samuel Sanborn vs. A. M. Drew, O. F. Lundelius, A. B. Smith, J. Q. Anderson and R. L. Eccleston, directors. Tbe property value of the Great Divide Oil Company is given by the plaintiff as approximately $100,000.

The Ophir Oil Company has sold its holdings on section 15-40 to the Sauer Dongh company. It is said that this purchase coupled with that of 160 acres in the North McKittrick field by the same company has reduced the dividend on Sauer Dough stock to 2½ cents per month.

Nat C. Goodwin and Edna Goodrich, his wife, who recently visited Coalinga, are interested in section 8, 19-15, which the Edna Goodrich Consolidated Oil Company, organized since Mr. Goodwin pulled out of his Nevada mining ventures, is preparing to develop.

Tbe Union Oil Company is reported to have consolidated its lease on section 13, 20-14 and the Claremont property, which are now to be conducted under one head.

The Esperanza Land & Oil Company has had its claims amounting to $14,000 placed against it with George K. Anderson by creditors. The Esperanza has been rather wobbly of late but the action taken is said to come as a considerable surprise.

W. H. Falconbury is rumored to have filed liens in Fresno agaiust the Elaine and Coalinga Crystal Oil Company as well as numerous other ones.

The Associated Oil Company is said to have secured a contract with the American Petroleum for 7000 barrels daily at a price not under 63 cents for a period of three years.

The Union Oil Company, acting for the Agencies, is reported to have closed a contract with the Los Angeles Gas & Electric Company for fuel oil for its subsidiary plants. The contract calls for a vast supply: 1910, 400,000 barrels; 1911, 600,000 barrels; 1912, 800,000 barrels; 1913 and 1914, 1,000,000 barrels. Price unstated.

The California-Coalinga, down 2792 feet in 70 feet of lively sand, has an average daily flow of 300 barrels and expects a greater still wben the sand is worked off and the tubing lowered.

$200,000 FOR TWENTY ACRES AT WHITTIER.

It is definitely stated that the above price for the entire field holdings of the Turner Oil Company at Whittier, consisting of twenty acres, has been paid by the Colorado Oil Company of San Diego. The production of the Turner Oil Company has been rated at 700 barrels a month of twenty degree gravity oil, suitable for refining, fuel and gas making purposes. It is said that the Turner will continue in the ownership and operation of the Densmore-Stabler refinery in Los Angeles which it has controlled for the past five years. Ten thousand dollars is said to be about the high water mark in oil land prices reached so far in California. Particulars of the transaction were not made public.

It is stated, but not yet authoritatively, that the Secretary of the Interior has withdrawn 147,887 acres of probable oil lands in California. The location of such lands has so far not been made known.

ILLINOIS CRUDE WILL CONTINUE ONE PER CENT MONTHLY DIVIDENDS.

H. W. Thomas, secretary of the Illinois Crude Oil Company, announced very recently at the California Stock and Oil Exchange that the company would continue to pay the regular one per cent monthly dividend in spite of the congested condition of the Kern River fields. He stated also that the company had secured additional property now producing, on which the company holds perpetual rights. This property will be developed.

$240,000 PURCHASE IN MIDWAY.

Clarence J. Berry, Henry Berry, of Los Angeles; Chas. Holbrook, of San Francisco and Wm. McGuire of Hanford, are reported to have purchased the north eighty acres of the Eagle Creek lease in North Midway at a price of $3,000 an acre. The Mammoth Oil Company will operate on the newly purchased territory, being formed by the purchasers for that purpose. Two rigs are said to be already under process of construction.

C. J. Berry is one of the principal stockholders of the Eagle Creek, from which the Mammoth's eighty was purchased. The organization of the Mammoth, said to be more or less under his direction, is regarded as being the very best proof of the values of land in North Midway.

SANTA MARIA BREVITIES.

(Santa Maria Graphic.)

Palmer No. 2 is down 2750 in oil sand. There is a strong pressure of gas and oil.

Los Alamos Petroleum adjoining the Ideal is down about 2800 feet in oil sand. It is expected that this well will come in before long and that the production will be large.

New Pennsylvania No. 1 on the Fugler tract is down about 2750 feet and like the Palmer has a strong oil and gas pressure.

The West Oil Company well is also about 2750 feet, making the fourth in the Cat Canyon district at about this depth and this well also shows strong gas and oil pressure.

The Foxen is down 3700 feet and the drill is now running right along.

The Princess has a rig on the Muscio tract in Cat Canyon.

The Dome is erecting a rig on the Tognazzini tract in Cat Canyon. This is the first rig on this tract.

KERN RIVER BREVITIES.

The Enos Oil Company has completed four new wells since the first of the year.

The Traders has two strings running on the Rambler lease.

The Ohio Valley Petroleum has a new fifty barrel producer.

The Kern Oil Company's No. 10 is pumping 25 barrels at a depth of 990 feet.

The Tejon's No. 8 is completed and is doing 60 barrels.

Oil Wells in Midway District

The Twist lease has two new 50-barrel producers.

The Dominion Oil Company, capitalized at $250,000, has filed articles of incorporation with the clerk of Kern County.

The Gray Oil Company has a new 40-barrel producer.

The Devils Den Associated Oil Company, capitalized at $1,000,000, has filed incorporation papers in the local clerk's office.

The old Lord Roberts Oil Company's land and the Brockman, opposite it, have been purchased by Max Grossmayer and will be worked in the near future.

The new Boston Petroleum Company has elected officers and is preparing to develop its lease.

The Bankers Oil Company has finished four wells since Christmas last, all of which are producing from 50 to 110 barrels daily.

The Standard is rumored to be doing a heavy oil shipping business from Kern to the Salt Lake railroad.

Kern oil in storage is reported low, and no alleviation is expected at present, according to latest reports.

SECTION SIX, MIDWAY, GIVES FIELD ANOTHER 1500-BARREL WELL.

The United Oil Company's well on section 6, 32-23, has been perforated and is pumping and flowing 1500 barrels of 24-gravity oil daily. The flow is increasing. The oil is going to the Standard Oil pipe at 65 cents per barrel, on a 200,000 barrel contract. It is reported upon creditable authority that the flow may easily reach 2000 barrels in a short time.

SUNSET, MIDWAY, McKITTRICK.

The California Midway on Section 32, 31-23 next to the Crandall and Eagle Creek has brought in a good well. It is said that rich oil sands have been struck between 2700 and 2800 feet, thus proving up a new territory. This is one of the most remarkable cases of pleasant surprises which has lately occurred in this field. It is almost impossible of belief that scarcely a week before the strike the well went into a body of water and there was said to be the slenderest kind of a chance for getting any oil at all. The outlook was the bluest faced by Midway operators in some time.

Immediately upon receipt of the news by the producers of the company that a strike had been made California Midway stocks shot up on the Los Angeles Exchange from ten cents to twenty-five. It is averred that 44,000 shares of stock changed ownership, the market closing at the top price, twenty-five cents.

An air compressor has been installed by the Jewett Oil Company.

The Producers Transportation Company has selected a site about one and a half miles from McKittrick upon which to erect four 55,000-barrel storage tanks, one of which is already under process of construction.

The Yancey well, farthest out on the field of North Midway, is making 200 barrels daily. It is one the pump. Yancey No. 1, on section 32, 29-22, McKittrick, is down 450 feet.

The Standard is getting the entire output of the Santa Fe "2-6" gusher, according to a late report.

The Pioneer-Midway well on section 30-31-23 is said to be in a fine shale at 2500 feet after passing through 35 feet of oil sand and having a half dozen blowouts, some of which shot as high as 150 feet above the derrick. A big well is looked for, no less than 200 barrels a day being expected. Every day seems to expand the limits of the Midway field.

Section 36-29-21, half a mile northeast of the Nacirema well, is to be drilled upon before the expiration of February by J. E. O'Donnell and Ed. McCray.

A new side track is being built at Olig by the Southern Pacific for the accommodation of tank cars.

L. A. Crandall, W. E. Buck, J. A. Buck, Jr., W. B. Gregg and M. J. Lindsay have organized the G. C. Petroleum Company, with a capitalization of $1,000,000 to drill on 36-32-24, out on the flat, Midway

A new townsite is to be laid out upon section 6, at Fellows, the end of the Sunset Western railroad, a few miles from Taft. The survey is expected to be completed within a few days. The site is south of the gushers.

The Gate City, which has a daily production of 800 barrels of 12.6 gravity, 300 barrels of which goes to Gladding, McBean & Co., near Sacramento, and the rest to the Sunset Monarch, will re-drill its No. 3, in which the casing collapsed, in the near future.

Advices from Taft state that J. E. O'Donnell has sold to T. G. Lockhart, of Goldfield, the south half of the southeast quarter of section 6-31-22. There is one well on the lease which has been deepened since the sale from 200 to 700 feet.

J. E. O'Donnell, newly appointed field manager for the $25,000,000 American Oilfields, Limited, has already put up two rigs on 36-31-22 and spudded in two wells on the east line of the southwest quarter. A superintendent has been selected, a camp established, two automobiles are in service and six strings of tools are to be run on section 36. One string will also be run on section 16-32-23.

The Hazleton Crude has again cemented off the water, but there is much doubt as to the setting of the cement as the minerals in the water affect the cement's tendency to set adversely.

The Whittier-Campbell Company, has purchased the west half of the southwest quarter of section 26-31-22 in North Midway from M. J. Laymance at $1100 per acre and will probably transfer it to the United Oil Company, the holder of its Midway interests.

Monte Cristo's No. 3 on Section 31, 2060 feet down, has no showing yet. Work has been renewed on it and also on numbers 2 and 3 on section 32.

Both Ethel D's are now producing on an average of 1000 barrels a day when taken together.

The Standard pipe line to the Santa Fe's 2-6 Midway gusher is now in.

The Standard has had to move its rig on section 16-31-23 on account of caving sand. No oil was encountered.

It is rumored that Burr Brothers of Coalinga, have purchased two parcels of land through E. W. Preston, also of Coalinga, and that they will begin operations in Midway shortly.

The Mellwood Petroleum Company has completed its No. 1, and has a production of 75 barrels per day therefrom. The Mellwood lease is a forty-acre tract on section 2, 28-28, and is considered excellent territory.

FIELD BREVITIES.

A remarkable gas flow has been encountered by the Amalgamated's Gillis No. 1, on the Wolfskill Ranch. The maintained flow is 3,500,000 feet per 24 hours. The well is said to have kept up this clip since Christmas last.

The Associated is rumored to have another 300-barrel well in its Pacific Petroleum No. 49.

Compressed air, being tried at Kern River, is making big wells of small ones. The Peerless is reported to be installing a $41,000 compressor plant.

The Standard is steadily shipping oil to a ready market in Los Angeles.

There is a movement "to effect a better understanding among the smaller refiners of California" on foot. The movement had its origin in Bakersfield.

There is said to be a fortune awaiting the enterprising Asphaltum business man who will tackle the Orient for his business.

OIL CARGOES IN JANUARY.

No cargoes of refined oil were sent from San Francisco in January, but there were six cargoes and a part cargo of crude from this customs district, as follows:

Steamer Lurline	410,000	$11,000
Steamer Rosencrans	966,000	25,300
Steamer Santa Rita	1,890,000	27,000
Steamer W. S. Porter	1,890,000	49,500
Steamer Santa Maria	1,890,000	27,000
British Steamer Oberon	1,932,000	27,600
British Steamer Pectan	2,730,000	39,000
Totals	11,708,000	$206,400

In January, 1909, there were four cargoes of refined and three of crude, making 12,228,313 gallons in all, and against 7,161,389 gallons in 1908.

Last month the Lurline, Rosencrans, Santa Rita and Santa Maria went to Honolulu, the W. S. Porter to Alaska, the

Oberon to Chile and the Pectan to Ancon. All but three of the vessels in last month's list were loaded at Port Hanford. Shippers manifest some cargoes of crude below $1 per barrel and others above that price, even when loaded at the same place.

The staemer Santa Rita was cleared at Port Hanford on the 6th for San Jose de Guatemala with 45,000 barerls crude oil, valued at $27,000; and the British steamer Trinculo at the same on the 4th for Aoncon with 46,000 barrels, valued at $27,600.

STANDARD'S MIDWAY WELL DOING 1500 BARRELS.

The Standard's Midway well is said to have already produced over 5000 barrels of 21 gravity oil in one day and to have an average daily production of 1500 barrels, although it is irregular in its flow.

The hole was finished with a rotary, the first in the state to bring in a gusher and one of the first used, although other companies are installing rotaries at the present time, notably the Lady Washington at Maricopa. The oil is gushing up through the bottom of a pipe three and one-quarter inches in diameter, which has not been perforated. The well, which is on section 30, 32-24, is one of four grouped in the center of the section, and the others, which are down about 1900 feet, the distance at which the rotary was employed on the present gusher, are also to be drilled with rotaries. They will be put down an equal distance in all probability, or about 2432 feet. The Standard has still another well about a mile and a quarter further out on the field down about 3000 feet. It is said to have a very good showing but it is now idle awaiting the setting of the cement.

TO REGAIN ORIENTAL TRADE.

The Chamber of Commerce of San Francisco, on behalf of the oil producers of California and for the benefit of the commerce of the port of San Francisco, recently cabled to the Tokio Chamber of Commerce to urge on the Japanese lawmakers, who are now discussing their tariff, to move for a reduction in the rate of duties on California crude oil.

The message says that on account of the increased duty, the trade in California crude oil is entirely stopped, and asks that endeavors be made to decrease the tariff in accordance with the wish of the San Francisco Chamber of Commerce and of California oil producers, in order to promote trade between Japan and America.

The trustees of the Chamber of Commerce say that until about one year ago California had a large trade with Japan for the crude fuel oil produced in this State. An amendment to the tariff regulating duties on crude oil was enacted by the Japanese Diet March 31, 1909, and became operative April 1, 1909, imposing duties ranging from 17 to 33 yen per ten gallons. Since then shipments of American oil have ceased entirely. The loss has been considerable, and the prospective loss will be much greater, unless the Japanese change their tariff.—Chronicle.

RECENT PATENTS.

The following patents, recently granted of interest to the oil trade, are reported expressly for CALIFORNIA DERRICK by J. M. Nesbit, patent attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each.

Well-rod lifter, Carl J. Atleson, Elm, N. D., 945,902.

Automatic cut-off for gas mains, Charles E. Lahmers, New Philadelphia, Ohio, 946,515.

Derrick, Patrick Yorke, Washington, Pa., assignor to Patrick Henry Yorke, same place, 946,815.

Clamping ring for pipe couplings, James Clark, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 946,933.

Derrick and masts for oil well riggings, David D. Campbell, Butler, Pa., 947,034.

Well-boring appartus, A. A. Steel, Fayetteville, Ark., 947,862.

Bell No. 1, of the Union Oil Company, is now averaging 500 barrels daily. Hopes are entertained that it will rival the great Palmer. Bell No. 2 also gives promise of big returns.

WYOMING.

The oil fields of Big Horn county, in Wyoming, are rapidly coming to the front as producers of the highest grade oil known in the history of oil production. The proven oil zone extends from a point a few miles southeast of Hyattville in a northwesterly directly to and beyond the village of Byron. It has long been a matter of local knowledge that oil existed in this section, but only in recent years has sufficient work been done to demonstrate its existence in commercial quantities. In the meantime oil has been struck midway between Byron and Gray Bull, and drilling twenty miles southeast of Gray Bull develops the fact that the oil-bearing sand continues in that direction.

COALINGA'S 1909 PRODUCT.

Statistics for the Coalinga field lately come to hand, show that it produced for the year 1909 the enormous total of 15,078,914 barrels of oil, from 564 operating wells, only 414 of which were producing when 1909 began. Following is a table of the production of the field for 1909 by months, with the number of producing wells:

Month—	Wells.	Production.
January	414	1,031,865
February	423	1,095,833
March	431	1,179,966
April	446	1,272,117
May	465	1,420,487
June	466	1,197,101
July	487	1,428,397
August	502	1,299,998
September	512	1,237,312
October	512	1,343,656
November	543	1,343,565
December	564	1,288,108
Total		15,078,914

The field report is as follows:

	South Field.	East Side	West Side.	November.	December.
Wells suspended	5	15	9	29	24
Wells drilling	17	47	85	149	153
Wells prod. sus		17	61	78	76
Wells prod	1	224	339	564	543
New rigs	11	19	39	69	66
Storage		100,734	858,393	959,127	801,056
Shipments		620,769	509,298	1,130,067	1,128,846
Production				1,288,108	1,343,565

The total was greatly swelled by the number of gushers brought in, of which the Silver Tip was justly considered the best.

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MONTHLY STATEMENT OF DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES TO JANUARY 31, 1910.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Jan. 15, '10	.03	11,400	$ 159,600
Amalgamated	Jan. 15, '10	1.00	50,000	1,400,000
American Pet.	Jan. 1, '10	1.00	122,785	803,225.50
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated	Mar. 1, '07	1.50	446,055	1,548,368.55
Bay City	Dec. 10, '09	.30	30,000	70,000
Brookshire	Jan. 1, '10	.01	5,000	442,500
Caribou	Jan. 15, '10	.25	20,175.75	660,180.24
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Claremont	Jan. 28, '10	.02	10,000	305,000
Coalinga Pac.	Dec. 23, '10	.10	6,500	107,250
Columbia	Jan. 25, '10	½c	4,996.31	254,811.63
Del Rey	May 15, '09	½c	3,927.50	11,782.50
Esperanza	Dec. 27, '09	.02	3,200	49,450
Euclid	Jan. 1, '10	.01	3,500	117,000
Four	Dec. 18, '09	.01	3,000	210,000
Globe	Jan. 1, '10	.01	6,000	81,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	Jan. 20, '10	.02	2,000	470,000
Homestake	Dec. 16, '09	.10	1,000	76,250
Illinois Crude	Jan. 1, '10	.01	2,000	84,000
Imperial	Jan. 6, '10	.60	60,000	1,940,000
Junction	June 1, '09	.01	2,500	20,000
Kern Oil	Nov. 19, '09	.22	22,000	42,000
Kern River	Feb. 3, '09	.10	2,000	98,000
Linda Vista	Nov. 6, '09	.01	3,838.50	65,254.50
Lucile	Dec. 20, '09	.10	2,670.44	42,727.04
Mexican Pet	Jan. 1, '10	.01 1-3	85,616.70	3,306,010.14
Mecca	July 15, '09	.03	12,675	71,825
Monte Cristo	Oct. 15, '09	.03	15,000	340,000
Nevada Co.	Oct. 13, '08	.04	10,000	40,000
Palmer	Jan. 20, '10	.01	18,020.05	214,320.80
Paraffine	Jan. 15, '10	.01	3,000	9,000
Peerless	Sept. 20, '09	.06	6,000	801,000
Piedmont	Aug. 16, '09	.01	3,890	22,987.30
Pinal	Jan. 31, '10	.10	14,992	857,117.50
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Record	Jan. 16, '10	.07½	7,500	40,000
Reed Crude	Dec. 28, '09	.12	12,000	1,124,000
Rice Ranch	Jan. 10, 10	.01	3,000	93,000
Royalty	Jan. 10, '10	.02	400	8,000
S. F. & McK.	Jan. 1, '10	.30	15,000	310,000
Sauer Dough	Jan. 26, '10	.02½	4,987.50	507,328.50
Sesnon	Jan. 26, '10	.15	15,000	90,000
Silver Tip	Dec. 31, '09	.10	7,500	22,500
Sovereign	Jan. 10, '10	.01	5,000	90,000
Sterling	Dec. 15, '09	.25	62,500	747,000
Superior	Nov. 13, '09	.01½	7,500	52,500
S. W. & B.	Sept. 10, '09	.01	3,770	41,470
Thirty-Three	Sept. 3, '09	.30	30,000	670,000
Traders	Jan. 15, '10	1.00	14,000	157,186.50
Union	Jan. 20, '10	.50	124,813	6,118,629.15
United Pet.	Jan. 20, '10	.50	40,375.50	2,098,208.93
Wabash	Jan. 16, '10	.01	3,000	114,000
West Coast, pfd	Nov. 15, '09	2.00	20,816	62,448
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000
Total dividends paid to date				$28,010,682.78

Total dividends paid by the above companies for January, 1910 ..... 652,561.81

TOTAL JANUARY PRODUCTION.

Following are California oil statistics for 1909, as given by the Standard Oil Company and published exclusively in the Oil City Derrick:

Field—	Rigs Completed. During Mo.	Drilling.	Completed During Mo.	Abandoned During Mo.
Kern River	30	24	17	5
McKittrick	15	27	4	1
Midway	17	63	15	2
Sunset	7	27	7	....
Coalinga	22	144	15	....
Watsonville	22	1	....	....
Arroyo Grande	1	5	....	....
Lompoc	4	5	....	....
Santa Maria	4	47	3	....
Summerland	....	1	....	....
Santa Paula	3	13	1	1
Newhall	1	9	....	....
Salt Lake	8	32	5	....
Los Angeles	....	....	1	....
Whittier-Coyote	....	11	1	....
Puente	....	3	....	....
Fullerton-Brae Canyon	4	40	....	....
Salinas Valley	....	6	....	....
Papetto	....	2	....	....
Total	116	469	70	9

Field—	Wells Producing.	Production for Month.
Kern River	1,324	1,285,490
McKittrick	134	461,346
Midway	119	371,813
Sunset	107	189,995
Coalinga	569	1,361,338
Watsonville	4	4,960
Arroyo Grande	3	1,930
Lompoc	16	53,010
Santa Maria	133	618,580
Summerland	112	6,120
Santa Paula	243	39,750
Newhall	70	12,476
Salt Lake	226	301,155
Los Angeles	450	44,506
Whittier-Coyote	134	81,070
Puente	54	3,250
Fullerton-Brea Canyon	221	399,583
Totals	3,919	5,236,372

	Barrels.
Stocks, November 30, 1909	19,638,295
Production, December, 1909	5,175,906
	24,874,667
Consumption, December, 1909	5,236,372
Stocks, December 21, 1909	19,698,761
Average daily production	168,915
Average daily consumption	166,965
Average daily surplus	1,950

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Brooks, Peyton H. ...459 12 St. Oakland
Bunting, J. A. ...Bacon Blk., Oakland
Clark, G. S. .....339 Bush St.
Coffin, A. F. .....343 Bush St.
Coleman, John B. .....Kamm Bldg.
Crocker, Henry J. .....354 Pine St.
Donnellan, Kenneth .....339 Bush St.
Doub, T. V. .....339 Bush St.
Edwards, Wm. .....339 Bush St.
Einstein, L. .....Fresno, Cal.
Ellery, Wm. .....48-52 Geary St
Eppinger, J. .....106 Pine St.
Epstein, E. .....309 Bush St.
Ettlinger, E. L. .....244 California St.
Ewen, J. S. .....232 Russ Bldg.
Farnum, N. C. 1225 45th Ave., Fruitvale
Godchaux, Edmond, 322 Montgomery St.
Goldman, J. .....220 Russ Bldg.
Goldzieher, S. .....339 Montgomery St.
Hagan, L. .....332 Bush St.
Hannon, Wm. .....339 Bush St.
Hayes, Wm. J. .....339 Bush St.
Herzberg I. .....357 Bush St.
Hinkel, G. W. .....Russ Bldg.
Hinkel, John .....Russ Bldg.
Hinkel, Wm. .....Russ Bldg.
Hoertkorn, George A. 1811 Grant Ave.
Houseworth, F. A. .....306 Bush St.
Ingels, W. H. .....Russ Bldg.
Jennings, C. B. .....24 California St.
Kahn, Joseph .....332 Bush St.
Kahn, P. D. .....332 Bush St.
Kilbourn, C. M. ...Bacon Blk., Oakland
Kibler, Luke T. .....Russ Bldg.
King, Joseph L. .....339 Bush St.
Kroeger, C. .....5 Washington St.
Kullman, J. .....351 Bush St.
Laing, Charles D. .....339 Bush St.
Landecker, S. D. ...245 Montgomery St.
Lewis, Frank R. .....310 Bush St.
Lilienthal, J. W. .....Flood Bldg.
Mack, J. J. .....Mills Bldg.
Mack, Sim .....305 Mills Bldg.
Maltman, W. D. .....332 Bush St.
Marvia, H. A. .....746 Sansome St.
Maxfield, H. . ...609 Monadnock Bldg.
McGuinn, H. R. .....235 Russ Bldg.
McKenzie, J. J. .....539 Pacific Bldg.
Mitchell, W. E. .....25 Broad St., N. Y.
Morse, W. H. .....339 Bush St.
Monteagle, L. F. ....502 California St.
Paxton, C. E. .....341 Bush St.
Ralston, W. C. .....Royal Ins. Bldg.
Reed, W. E. .....Bacon Blk., Oakland
Richard, G. W. 2447 Russell St. So. Berk.
Rockla, Fred .....232 Russ Bldg.
Salainger, I. .....Postal Tel. Bldg.
Samson, R. .....216 Pine St.
Shannon, Sam .....Russ Bldg.
Shaw, B. F. .....335 Bush St.
Shinn, H. H. .....339 Bush St.
Sneider, Geo. C. 513 Merchants Ex. Bldg.
Stauf, W. .....306 Bush St.
Stemberg, Frank .....339 Bush St.
Stoney, Donzel .....Crocker Bldg.
Toplitz, Joseph B. .....339 Bush St.
Van Wyck, L. H. .....375 Bush St.
Wangenheim, H. 422 ....Mer. Ex. Bldg.
Waterman, Aug. .....Russ Bldg.
Whitley, H. A. .....456 Mills Bldg.
Wiel, I. J. .....32 Broadway, N. Y.
Wingfield, George .....Goldfield, Nev.
Wilson, B. L. .....353 Bush St.
Wolf, Max .....338 Clay St.
Wollberg, A. S. .....324 Bush St.

LOS ANGELES QUOTATIONS.

Company.	Bid.	Asked.
Amalgamated Oil	65.00	80.00
American Crude Oil Co	.....	1.10
American Petroleum (pfd)	90.00	97.50
American Petroleum Co. (com)	75.00	.....
Associated Oil	46.25	46.50
Brookshire Oil	.....	1.20
Central	1.35¾	.....
Cleveland Oil Co	.20	.30
Columbia	1.10	1.23½
Continental Oil	.....	.60
Euclid Oil Co	.55	.60
Globe	.....	.....
Jade Oil Co	.33	.37
Mexican Petroleum	.....	1.05
Mexican Petroleum Limited (pfd)	67.75	.....
Mexican Petroleum Limited (com)	25.25	26.00
Olinda Land Co. (Oil)	.39½	.....
Palmer Oil Co	1.12½	.....
Perseus Oil Co	.....	.35
Pinal Oil Co	.....	13.00
Piru Oil & L. Co	.17	.....
Reed Crude	.32⅜	.....
Rice Ranch Oil Co	.87	1.10
Section Six Oil Co	.....	.60
Trader's Oil Co	111.50	115.00
Union	103.00	103.25
Union Provident Co	100.25	102.25
United Petroleum	.....	103.50
West Coast Oil (pfd)	9.00	.....
Western Union	.....	175.00
Yellowstone Oil Co	.45	.45

NON-PRODUCERS.

Billiken Oil Co	.....	.....
California Midway Oil Co	25⅛	.25⅜
Elk Consolidated Oil Co	.....	.....
Provident Midway Oil Co	.....	.....

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

Company.	Bid.	Asked.
Amalgamated Oil	.....	80.00
Amauroi		
Apollo	.10	.15
Associated Oil Stock	48.00	.....
Associated Bonds 5s	96.00	.....
Bay City	2.00	2.50
Blue Moon	.30	.31
Brookshire	1.00	1.02½
Caribou	.....	15.50
Chicago Crude	.11	.....
Claremont	1.75	2.00
Coalinga Pacific	4.50	6.00
Dabney	.....	.12
Del Rey	.12	.....
De Luxe	2.15	.....
Enos	1.20	1.25
Esperanza	2.25	.....
Four	.40	.45
Fulton	1.00	1.37½
Gypsy	.18	.....
Illinois Crude	.54	.58
Imperial	.....	32.00
Junction	.40	.....
Lucile	.....	11.25
McKittrick	.15	.....
Paraffine	1.40	1.60
Palmer	1.12½	1.17½
Piedmont	.....	.24
Pinal	6.50	.....
Premier	.....	1.20
Producers'	2.00	.....
Record	6.00	.....
S. F. & McKittrick	27.00	.....
Saeuer Dough	.....	27.00
Sesnon	8.00	.....
Silver Tip	3.35	3.40
Sovereign	.....	.25
S. W. & B.	.....	.45
Sterling	.....	3.75
Sunset Monarch	.50	.....
Turner	.60	.65
Union	102.50	.....
Wolverine	.25	.....

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Vol. 2 San Francisco, Cal., March 1910 No. 10

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Vol. 2 San Francisco, Cal., March, 1910 No. 10

WATER IN OIL

BY PROFESSOR EDMUND O'NEILL.
Head of the Chemistry Department, University of California.

The noted chemist, Prof. Edmund O'Neill, head of the Chemistry Department of the University of California, will from now on contribute articles of an essentially practical nature on the chemical aspects of petroleum in California. His articles, like the contribution in this number, will be free as possible from hyper-technical expressions, making them highly readable and as pleasing as they are profitable for the oil man. We notified Dr. O'Neill of our desire for authoritative articles on the chemical properties of oil some time since, and the following practical paper is the first of the series to be published by us, written by this world-known authority.

Crude petroleum always contains water. This water is mechanically mixed with the oil, sometimes in large masses or blots, sometimes in such a finely divided condition that the globules of water can be seen only with high-powered microscopes. These mixtures or emulsions of oil and water are produced by rubbing or grinding the two liquids together, either in their passage through sand or rock, or by subsequent stirring together in pumping. This is particularly noticeable when water is intentionally added to facilitate pumping through long pipe lines. Water may also be acquired in transportation by sea, when the bilge water in the tanks is churned up with the oil by the movement of the steamer.

Water being heavier than oil has a tendency to separate out and settle to the bottom. The rate of settling varies according to circumstances; the lighter and thinner the oil, the greater is the speed of separation, other things being equal. Hence the practice of heating the petroleum to induce this separation under the influence of gravity. A more important factor determining the rate of separation is the fineness of the emulsion. The smaller the particles of water and the more intimate the mixture, the slower will the separation take place. The water exists in the oil in globules that are more or less perfect spheres. The smaller these spheres, the less is their weight, and the greater becomes the ratio of surface to volume and weight. Again, these spheres become covered with a film of oil under tension, exercising a repellant force on each other, preventing the amalgamation and union of these small globules to form larger spheres, which would weigh more and therefore would have a tendency to settle. The condition of these globules has an analogy in the familiar experiment of rubbing a little oil on a needle and then showing how it will float in water, although steel is about seven times as heavy as water. In other words, water may be in such a condition in oil that it will practically never settle out. An experiment will illustrate this. Seven years ago I made a determination of the water in a sample of crude petroleum. It amounted to 10.26 per cent. This oil was placed in vessel which it filled to a height of 18 inches. Every year a sample was drawn from the top and one from the bottom. There was a slight increase of water in the bottom and corresponding decrease in the top. The difference was small, however. In seven years it has not amounted to one-half per cent. On the other hand, some oils will show a marked difference under the same conditions in a few days.

Water in oil is detrimental in many ways. It adds to its bulk, increasing the cost of storage and transportation. If the oil has to be heated, large amounts of this heat will be absorbed by the water. The specific heat of water is much greater than that of oil, being in the ratio of more than two to one. This excess of absorbed heat is of some advantage if the oil is to be kept warm for a considerable period of time, as in long distance pipe transmission. Water in oil also sometimes facilitates pumping directly, the two liquids in a way mutually lubricating one another.

The chief disadvantage of water in oil is shown when it is used as a fuel or when it is distilled. It not only diminishes the heat value of the oil in the sense that it is a non-combustible material, thereby proportionally diminishing the heat value of the oil, but when water containing oil is burned under a boiler, a large proportion of the available heat units is used to vaporize the water, and the steam thus produced is carried away through the stack, producing no useful work, but is an absolute waste.

The same detrimental effect of water is seen in the distillation of such oil. Not only does it require more heat, but the sudden bursting of the water into steam carries oil over with it. The still "pukes" or may even explode. To avoid these troubles the heating of the still must be conducted very slowly, with consequent loss of time and disarrangement of still schedule, with corresponding greater cost. Another great disadvantage of water in oil that is to be distilled lies in the fact that this water is often saline, containing quanti-

ties of dissolved salts. These salts deposit in the still bottoms in the process of distillation, forming a non-conducting layer, which in turn increases the time of distillation, requires more fuel, overheats the bottom plates, necessitating repairs, and shortening the life of the still. The harmful effects of this overheating are intensified by the fact that a temperature may be reached that will decompose the deposited salts, setting free acids that may corrode and pit the plates in a marked degree. Add to this the time necessary to remove this scale, a process necessitating the cooling of the still, putting it out of commission sometimes for days, and the detrimental effect of water in petroleum will be readily appreciated.

This brings us to the consideration of some of the methods that have been proposed for the removal of water from petroleum. These will be given in our next issue.

WESTERN PUBLIC OIL LANDS.

The California oil-land withdrawals made prior to March, 1909, aggregating 2,313,482 acres, prevented the acquisition of the withdrawn lands only under the agricultural land laws. All lands covered by these withdrawals could be legally exploited for oil or other minerals. During the year these lands were excepted from acquisition as oil or as mineral lands, as well as for agricultural use. New withdrawals were made in the states of California, Colorado, Oregon, Utah and Wyoming of a total area of 2,130,510 acres. In California there were restored to entry 956,916 acres that field examination had shown to be non-oil land. The area now covered by oil withdrawals is 3,487,076 acres.—From U. S. Geological Survey Bureau.

PRODUCTION OF PETROLEUM IN 1909.

The United States Geological Survey furnishes the following estimate of the production of petroleum in the United States in 1909, by oil fields. The production of 1908 is given also for comparison:

Field.	1909. Barrels.	1908. Barrels.
Appalachian	27,000,000	24,945,517
Lima-Indiana	8,300,000	10,032,305
Illinois	28,200,000	33,685,106
Mid-Continent	43,300,000	48,323,810
Gulf	13,200,000	17,318,330
California and Rocky Mountain States	58,000,000	45,267,411
	178,000,000	179,572,479

PREMIER INCREASES PRODUCTION TO 65,000 BARRELS.

The Premier Oil Company has just completed its twelfth well on section 24, 20-14, Coalinga. The well is good for about 300 barrels a day. It is on the east line of the property and about 1,700 feet deep. Three weeks ago the eleventh well was completed. It is averaging about 200 barrels. Depth about 1,300 feet. The company now has a production of approximately 65,000 barrels per month. Drilling on two more wells has been started. They are on the south line adjoining the K. T. & O. property. Premier stock has been the most active trader on the exchange for the past two months, due to the fact that public attention has been called to its merits through a forceful publicity campaign conducted by the Lincoln Mortgage and Loan Co. of San Francisco, Financial Agents, which had the sole sale of the last of the company's treasury stock. The price has advanced to as high as $1.40 a share.

ASSOCIATED.

At a meeting of the directors of the Associated Oil Company held a short time ago, the final steps were taken in the process of securing a $25,000,000 loan. The Union Trust Company of San Francisco was displaced as trustee for the former $6,000,000 mortgage by the Southern Trust Company of Los Angeles and the first named was then made trustee for the larger amount.

The better part of a year has been consumed by the Associated in securing this loan, after the bonds had been practically placed. The company officials are reported very pleased that the proceedings have at last terminated favorably. The annual meeting for the election of directors of the company was held in the field at Kern River on the last day of February, when the stockholders of the Associated, the Amalgamated and tributary companies met at Oil Center. No questions of policy were discussed at the meeting, which at once proceeded to elect directors and officers as below:

President, W. F. Herrin; first vice-president and general manager, W. S. Porter; second vice-president, Paul Shoup; secretary and assistant general manager, O. Scribner; treasurer, W. A. Sloan; assistant secretaries, G. Sheridan and J. L. Bruce. The directors went into executive session after the election of above as officers. The Amalgamated elected the same officers, the only change being the election of W. F. Herrin to succeed W. G. Kerckhoff of Los Angeles.

At this meeting Vice-president and General Manager W. S. Porter read from a lengthy report the figures showing the financial position held by the Associated today. An enormous business was transacted by the company last year and it is in a very flourishing condition.

Some of the details are as follows: Total amount earned during last fiscal year, $15,420,830.87. Of this amount $13,895,260.76 was earned by the Associated proper, the remainder being dividends from affiliated companies. Total disbursements for all expenses were $12,541,213.64. Depreciation was estimated at $711,000, the two sums making a total debit of $13,252,213.64. Actual earnings estimated at $2,168,617.23.

Mr. Porter also said:

"The company has a new 60,000-barrel tank ship building at Newport News, to arrive about June 1st, and a barge to facilitate and cheapen deliveries on San Francisco bay.

"It has a pipe line completed from Port Costa to Coalinga, 189 miles, and extensions are being made to McKittrick, 72 miles, and on into Midway and Sunset fields, about 30 miles further.

"With all our new and coming equipment soon to be available, the company has business enough to tax the capacity of the plant."

A stockholders report is being made out which will supply complete information. The earnings for 1909 were larger than for the year previous.

OIL MEN'S BANK IN LOS ANGELES.

Of interest to all California oil men is the opening of the Oil and Metals Bank and Trust Company for business in Los Angeles. The opening took place upon the 18th of last month. There were deposits in the bank at the time of $300,000, with $300,000 of an authorized capital paid in. Particulars state that the Union Exchange Bank and the Columbia Trust Company are absorbed by the new institution and that the five-story Columbia building, in which are the quarters of the Sierra Madre Club, goes in as one of the assets.

The fact that an oil and mining bank has been started shows the stable basis of the oil industry. The numerous oil men must have some place to safely bank their millions and they might as well place them in an oil men's bank as elsewhere.

HONOLULU GETS GREAT WELL.

The famous so-called Honolulu "gasser" in the Buena Vista hills has proved to be a gusher, having produced an average of 500 barrels of a very high gravity oil daily since it came in last month. The oil is of a very high grade, ranging from 28 to 30.8 degrees Baume.

The Honolulu well is located on section 10-32-24 (Midway). It has been in the public eye since it first struck its great gas flow last summer, which immediately distinguished it as the "Honolulu gasser." So great was the gas pressure that it was found necessary to drill the well with a rotary and J. A. Pollard, an experienced rotary operator who has brought in many a good well in the Beaumont, Texas, field, finished it last month. The Honolulu is considered to have proved up a large acreage and to have extended the field for several miles, making it the largest in the State.

Many rumors as to the sale of the Honolulu property were rife for a time, but nothing has as yet come to us which can be considered as authentic. The Standard Oil Company is reported to have made an offer of $1,000,000 for all section 10-32-24, the property of the Honolulu company, and a statement is made that a check for $25,000 accompanied the offer, with the promise that the balance would be paid within thirty days. The Honolulu company is said to have refused the offer and to have demanded at least $1,500,000 before giving the matter further consideration. The Standard is also reported to have secured the production of the company on a 5,000,000 barrel contract at 65c per barrel, the oil to be not less than 24 degrees Baume.

As a result of the oil secured by the Honolulu company in its famous well, the Buena Vista Hills district is witnessing a great rush for oil lands. Locators are more than busy trying to hold their claims. Lumber for the erection of derricks is at a premium, if reports may be at all credited. All lands in the district whose claims are clear are said to have jumped away up in price. Maricopa is experiencing a boom. The hills are reported filled with "gun men." "Ed" McCray, for instance, has taken possession of all of sections 4-10-14-24 in 31-23, and 30-31-24, which he declares his intention of drilling on at once. He is reported to have purchased the entire stock in the lumber yard at Fellows, to have hired seventeen big teams within one day, to have purchased a carload of engines and had them hauled to the scene of his operations and to have ordered ten miles of pipe to be used for a water line from Buena Vista Lake to the sections he is operating on. In addition, it is said that he has placed a $60,000 order with one supply house. He is declared to be representing the American Oilfield Company. There are rivals to McCray.

Messrs. A. L. Thackeray, Tom Kingston and their associates made locations on the lands under dispute in January, 1909, and in May of the same year other locations were filed by W. H. Cooley, two other men and Guy Lothain, who claimed that the previous locators had not performed the necessary work. Later on, I. Hirshfeld, of Bakersfield, effected a compromise between the rival claimants and agreed to drill the land for 120 acres of each quarter. He interested Tillman & Bendel of San Francisco and Robert Cords. Matters rested there until the bringing in of the Honolulu, when the American Oilfields Company conceived a liking for the land and undertook to purchase it. They were unable to make a bargain with Hirshfeld, but it is reported that they did come to an agreement with the locators. From then on Ed. McCray took charge of operations, while Hirshfeld gathered a party of stop-at-nothing men and sent them to the scene of action.

Hirshfeld's party declared their intention of drilling on some of the land pre-empted by McCray, if the Wild and Wooly West stories may be credited. Of the whole mix-up, two things only seem certain: The Honolulu started the muss by getting an excellent well and the Standard contracted for its output, which caused McCray to seize adjacent property for the American Oilfields Company.

STANDARD OIL CO.'S WELL NO. 2, SECTION 26, MIDWAY, NOW FLOWING OVER 9,000 BARRELS OF OIL DAILY.

When the well was first brought in it began flowing about 2,000 barrels, but has so steadily increased that today the oil is shooting out fully 65 feet from the mouth of the pipe. The well is a marvel, becoming stronger every day. The Standard is well repaid for its wildcatting in Midway, having proved up an enormous acreage thereby.

PICTURES OF THE CALIFORNIA OIL FIELDS.

Arthur C. Pillsbury of the Pillsbury Picture Company, 174 Geary Street, San Francisco, has just finished a trip to all the oil fields in the State. He has a collection of panoramas of every section of note, including the Santa Maria, Summerland, Santa Paula, Newhall, Los Angeles, Olinda, Brae Canyon,

Whittier, Salt Lake, Kern, Sunset, Midway, McKittrick and Coalinga districts. The set consists of fifty negatives and is being made up in album form to sell for $17.50, or single prints, 10x36 size, for $3.00 each.

PROBABLE REDUCTION OF JAPANESE IMPORT DUTIES.

In reply to the cable message sent by Chester W. Burks, Secretary of the Associated Chambers of Commerce of the Pacific, to the Tokio Chamber of Commerce, in regard to the move for a reduction in the import duties laid on California oil, a message was received from the Japanese that President Nakano of the Japanese Diet was working in favor of the reduction. He has introduced a measure in the Japanese Diet, now in session, which, if passed, will reduce the Japanese import duties on crude petroleum from the United States from 30 per cent to 50 per cent.

As was noted in the February Derrick, the oil trade between Japan and the United States has been entirely stopped since their tariff rate against oil went into effect a year ago. The move on the part of President Nakano, if successful, will be of great benefit to oil producers, opening the Oriental trade to us again. President Nakano is reported as being the champion of the American cause, and as being also a very far-sighted statesman who knows what is good for his own country, as well as knowing how to gain the good will of other nations.

It is to be hoped that no cog slips in the working of the Diet on this measure until it is safely through.

FAMOUS GUSHER'S OIL TO GO TO AGENCIES.

The Santa Fe's production from its famous gusher in the Midway field on section 6-32-23 is going to go to the Independent Agencies instead of the Standard Oil Company, which, it was rumored, had laid a pipe line to the lease to secure the production. The terms on which the Agencies take this oil are unknown, but it is supposed that there will be no cash settlement but rather an exchange of oils between the Santa Fe, which needs fuel, and the Agencies, which are looking for light gravity, refining oil. The action taken, while very beneficial, doubtless, to both parties, is a surprise, as it had even been given out that the Standard would receive the oil for its refinery.

TEMPLOR RANCH.

The Producers Pipe Line will shortly be completed to the Templor Ranch property in the Templor district and the company will soon begin marketing its oil. It now has about 15,000 barrels of oil in storage and will continue pumping it into the new 50,000-barrel reservoir. The approach of the shipping period and consequent dividend-paying stage of the company has caused a heavy advance in the price of the stock, now quoted over 50 per cent higher than it was a few weeks ago. The company has nine producing wells, all finished at a depth of less than 400 feet and good for an average of more than fifty barrels daily. This production will be increased by drilling new wells which are expected to run about 100 barrels daily. The latest wells drilled started in around 125 barrels, a remarkable showing at such a shallow depth.

(Photo by Pillsbury, San Francisco.)

ANOTHER HEAVY PRODUCER. STANDARD OIL COMPANY'S WELL NO. 11, MIDWAY.

SAN FRANCISCANS VISIT MIDWAY.

A long string of capitalists has been invading Midway ever since the fields began to show up as gusher grounds. Recently a party of twenty-two business men and capitalists returned from the fields to San Francisco after a most satisfactory trip. The party was conducted by Chas. Holcombe and William Maguire. J. D. Spreckels, M. H. de Young, Murray Innes, Louis Hoefler, J. Parker Whitney, Henry Ach, Nathan Bell, William Erb, Edgar Misner, Judge McCloskey and Vincent Whitney and others equally well-known comprised the party.

The visitors landed at Maricopa, where automobiles were in waiting to carry them from one gusher to another. The K. T. & O., Ethel D., M. & M., St. Lawrence and a host of other good wells were seen. The party was treated in the evening to a sumptuous spread given by Clarence Berry and Joseph Laymance in the Ethel D.'s large dining room. The capitalists signified their confidence in Midway by declaring their intention to invest. Incidentally, a new oil company, called the Horizon Oil and Gas Company, was organized with a capitalization of $500,000, which was over-subscribed. A

valuable quarter section of land was taken over for development by the newly-formed company. The visitors then returned to their private car. The next day was spent in a trip through the Buena Vista hills, seeing the Honolulu gusher, a stop in Moron, return to Maricopa and from thence to Bakersfield, where the special was connected with the Owl, the following day finding them all back in San Francisco. A very enjoyable and profitable trip was made and all concerned were more than pleased to have taken it.

H. H. Blood is again in the public eye, having been joined by a number of British Columbia capitalists in the purchase of land adjacent to the Lady Washington Oil Company's property. The land purchased consists of the north half of section 4, 32-23, 320 acres, and sells for a price of $400,000. Mr. Blood is general manager of the Canadian Pacific Oil Company, Ltd., of British Columbia, which holds a royalty lease on the northeast quarter of the purchased section. The syndicate which he represents is composed of Andrew Grey, first vice-president of the company; Hugh Springer of Vancouver and Ross, and Skinner of Winnepeg, Manitoba. Mr. Blood is, of course, one of the syndicate. The purchase was made subject to the leases of the Canadian Pacific and Cleveland Oil Companies, both of which are drilling. This is proven territory, both the St. Lawrence and California Midway having good wells.

MORE SWINDLING ALLEGED; "FREEZE-OUT" CLAIMED.

Claiming that they are the victims of a freeze-out, R. Weerts, C. L. Feldweg and Russell R. Dorr, stockholders of the American Duchess Oil Company, have brought suit for accounting against the American Duchess Oil Company, the High Gravity United Oil Company and James B. Kerr, the promoter. Others against whom suit is brought and who are associated with Kerr, are: Harry H. Davis, Chas. F. O'Brien, Milton M. Davis, Fred Rothman, T. C. Tridell, H. H. Kerr, W. S. Gilmore, M. A. O'Brien, H. M. Dawes, Frank B. Lane, H. B. Wade, J. D. Brown, A. Kowalski, and A. Bailler. The defendants are the directors of the named corporations.

The charges look nasty. The whole affair has an unsanitary look; it needs an airing in the courts. What the situation must be can approximately be gathered from the following: The funds of the corporation have been disseminated "until nothing remains of the property (of the American Duchess Oil Company) except what has been transferred to the High Gravity United Oil Company, which is said to be a sort of dummy corporation."

Plaintiffs allege that on May 13, 1905, an assessment of 1 per cent was levied on all shares of American Duchess stock, followed by two other assessments of 2 per cent each, although it was understood that the stock was fully paid up and non-assessable. Plaintiffs' direct charge against James B. Kerr, as president, is that he refused Dorr any reports as to the condition of the company, and that he has entered into a conspiracy to freeze out the plaintiffs by selling stock on the "express agreement of its non-assessability, and then, by incurring debts for extravagant and unreasonable salaries for himself and associates to assess the stock time and again.

"And when the stockholders grew weary of being held up," the complaint continues, "he sold the stock back to the corporation and himself."

For as long as four years Lewis E. Aubury has been on the trail of Broker Kerr. Mr. Aubury recently told the editor of the California Derrick that Mr. Kerr had a string of corporations a yard long which, said the State Mineralogist, "are almost all of doubtful character. And all of which have been branded as fakes to me, in my capacity of State Mineralogist, by credulous, poor stockholders who thought they had a bonanza until they were stripped almost to their last pennies."

It seems deplorable that such things should be, especially in oil circles. But it is a recognized fact that so great has been the prosperity of the oil industry that fakirs have seen many a chance to get easy money; and have taken it. The only way to root out the evil is through the courts and vigorous prosecution will doubtless follow the charges in the present case. The State Mineralogist is hot foot after the promoters of half a dozen other fake oil companies at the present time. It is to be hoped that justice will temper all his actions and that, in the opening of the battle, charges will not be made against corporations which cannot be substantiated and which would only hurt such companies when they are acting in good faith.

Mr. Aubury is a militant official, zealous for the people's good, and much may be righted under his guidance which might otherwise continue as a leprous spot in the healthiest industry in the State.

CALIFORNIA MIDWAY.

The California Midway Oil Company has contracted with the Standard Oil Company disposing of 1,000,000 barrels at 65c the barrel. Considering the fact that the company's well No. 1 is not yet finished, it looks as though the company had undertaken a large proposition, but the well is already spurting an average of four times every twenty-four hours, each eruption producing from 100 to 150 barrels of 24 gravity oil. At six hundred barrels a day the company would have a nice income, but it is expected that the production will be in the thousand-barrel and not the hundred-barrel catagory, when it is finished.

The company was offered .75 a barrel by other marketing concerns, but with stipulations in regard to car service and other matters which were unacceptable to the company and which made the Standard's offer more to their liking. It is said that the company will issue bonds to $100,000 to exercise its option of four months from date on which first well is completed, on its 60-acre lease on 32-31-23; the land on which it is located. The company's well No. 2 is down 900 feet and its No. 3 about 300.

A big excitement was caused on the Los Angeles Stock Exchange when news of the California Midway was heard. Stock took a hurrying flight upward and stayed there.

STANDARD DISREGARDS BALLINGER ORDER.

Some time since the Standard Oil Company was declared to have such a respect for Public Opinion that it would not, under any circumstances, drill on lands which were withdrawn by order of the secretary of the interior, upon which it was not drilling on April 27, 1909, the date of the great withdrawal of oil lands from entry, irrespective of what other and holder companies proposed to do.

Operations by the Standard Oil Company will be resumed upon sections 12, 18, 20, 26 and 28 in the Midway field. Hence, withdrawal order or no withdrawal order of the interior secretary, the Standard will go ahead serenely.

Work on above mentioned sections has been suspended for about two months, said suspension said to have occurred through the belief on the part of the officers of the company that one well was sufficient to prove up five quarter sections. A different view is now taken and the Standard has decided that each quarter requires a well and is going ahead regardless of the interior department's withdrawal order.

EASTERN SHIPS CONVERTED TO OIL BURNERS.

News reaches us from New York that the "crack" steamers Yale and Harvard, plying between New York and Boston during the summer months, are to use crude oil for fuel during the coming season. A number of other steamers in the East are also being converted into oil burners, and it is stated that the use of oil for fuel will be limited by price only.

K. T. & O.

The K. T. & O. Company got a 7,000-barrel, light oil gusher recently on their property on the northwest corner of the northwest quarter of section 1-11-24, Maricopa, which sanded up for a time but not until after it had entirely paid its total expenses for drilling, bringing in, etc. The well is now being worked to restore the flow. When the oil was first struck it gushed high above the crown sheet all over the derrick. It looked like another Section Six or Palmer. The greatest excitement was created. Land values in the region have shot away up.

The well began to produce at about a 3,000-barrel clip, but soon increased until gushing between 6,500 and 7,000 barrels of 20 gravity daily. Then it suddenly sanded. Since then it has produced as high as 12,000 barrels.

The gusher is known as K. T. & O. No. 28. Its exact location is about 400 feet from both the Ethel D. and Monte Cristo properties, a mile from the well-known Lady Washington Oil Company's property, on which is located their well No. 1.

MAYS OIL COMPANY GETS GUSHER.

The Mays Oil Company, operating on the flat in North Midway, the southwest quarter of the southeast quarter of section 30, 31-23, is reported upon creditable authority to have reached the sands at 2,760 feet and to have obtained a 10,000-barrel well of high grade oil. Neighbors to the Mays are the Hawaiian, California Midway and Pioneer Midway Oil Companies. The Mays is owned by California, New York and Canadian capital. Details are meager at present.

News of this wonderful gusher proves the Midway field to be, if not the first, at least second only to the Coalinga field, in all the world. Midway is certainly the field of spectaeular gushers.

Later reports from Bakersfield are to the effect that the Mays well is not only the largest well in Kern county, but without a doubt is the largest well ever brought in in the state. A sump hole, holding over 7,000 barrels of oil, was filled in one hour and ten minutes, notwithstanding the fact that at least a third of the oil was shot over the sump hole into the sage brush. For about four hours the well was gushing at the rate of more than 50,000 barrels of oil per day.

THE K. T. & O. GUSHER AT MARICOPA, "SANDED UP."

Brought in a few weeks since, this wonderful well flowed enough oil in a few days to entirely pay for itself. Directly across the road from this remarkable well is situated the Ethel D., no less famous, which flowed between 6,000 and 8,000 barrels of oil the day it was brought in and which is still flowing at a great clip.

CALIFORNIA OILFIELDS LIMITED.

The annual meeting of the stockholders of the California Oilfields, Ltd., is scheduled to take place March 18th. It is probable that the future policy of the company will be discussed at this meeting. The question of the sale of their light oil production will undoubtedly receive attention. Many of the stockholders favor keeping their oil themselves and starting in the refining business. The small refinery at Berkeley, generally supposed to be the property of the company, is held under the name of the firm of Balfour & Guthrie, which is established the world over. It is possible that this refinery may form a nucleus from which a large refining business will develop. It is said that the Standard will not have a chance to renew its contract with the California Oilfields, Ltd., after this meeting. Just what action will be taken is naturally a matter of conjecture, but it is generally expected that the outcome will be the starting in of an active competition with the Standard Oil Company by the British concern.

CENTRAL OIL COMPANY.

The Central Oil Company at Whittier is reported to have a well producing 600 barrels of 31 gravity oil daily—No. 52. The company is now actually running five and considering running ten strings of tools. The average price received for its oil for 1910 is over $1.00 per barrel and unless great activity in drilling is crowned with success, the company may not be able to keep its contracts. Dividends amounting to $116,615 were paid by the company last year. The proven territory of the company is represented as being capable of producing 30,000,000 barrels of oil more before exhausted.

At the annual meeting held during the latter part of February the following directors were elected: W. W. Neuer, R. N. Bulla, H. R. Lacey, I. B. Newton, J. M. Elliott, I. A. Lotham and D. C. Sullivan. The old officers were re-elected: W. W. Neuer, president, and R. N. Bulla, secretary.

BLUE MOON.

At the annual meeting of the Blue Moon Oil Company, held during the latter part of February, a new board of directors and officers was elected for the ensuing year and another assessment of five cents per share on all stock was levied.

The newly elected directors are: G. W. Campbell, Milton Bernard and R. V. Ellis of San Francisco; George M. Kohler of Fresno and S. R. Bowen of Coalinga. The board was immediately organized with G. W. Campbell president, S. R. Bowen vice-president and D. M. Speed secretary and treasurer. D. M. Speed was commended upon the excellent condition in which he had kept the records of the company.

Mr. Campbell, representing a majority of the stockholders, said that it was desired to get the company on a dividend-paying basis as soon as possible. The company is $12,000 in debt, but oil is being run and returns from the production of well No. 1 will soon be received.

VIEW INSIDE DERRICK. A ROTARY DRILL IN ACTION.

This photograph was taken inside of a derrick where the rotary was in full action, at Wylie Canyon, about 12 miles from Newhall. Drilling with the rotary is very rapid and has proved successful in the Midway field. The Lady Washington Oil Company will install a rotary to complete drilling their well No. 1, located in the heart of the gusher district, which has a great gas pressure and from which much is expected.

NEW CRUDE OIL BURNER INVENTED.

A crude oil burner seemingly of the simplest description, yet which will save an enormous amount of money and which the inventors claim will "revolutionize the industry," is being shown the public by Oakland men. If the burner will do what the originators claim for it, their fortunes are made. The two inventors are H. E. Boyrie and J. H. Becker. They say that their burner solves the problem of expensive mixtures-equipment by simply mixing 90 per cent of crude oil with 10 per cent of water and burning the mixture in an ordinary furnace lined with fire brick.

The mixing process is very simple and those who have seen the working of it say that the marvel is that no one should have discovered it before. It consists of two tanks, one containing crude oil and the other water. Pipes from each tank connect at a point above the furnace and the oil and water are mixed just before they drop into the fire box below.

As soon as the oil, mixed with water, strikes a red hot plate in the bottom of the furnace it vaporizes, giving forth an intense heat but throwing off but little smoke, all the constituents of the mixture being practically consumed. The apparatus thus is nearly smokeless and will effect a great economy as well as do away with the smoke nuisance.

SECTION SIX.

The Los Angeles Coalinga Syndicate, operating twenty acres of the ground of the Section Six Oil Company in section 6 of Coalinga, has its well down 2,385 feet and expects to drop into the main productive sand in about 100 feet. The Muriel, on the other twenty acres, is down close to 2,300 feet and should get the same sand in about 150 to 200 feet. The Section Six Company paid its first dividend of one cent per share last month and will continue on this basis from the production of the Merrill Crude lease in Kern River. The company will probably increase the rate as soon as the Templor Ranch begins to market its production. The Section Six owns two-fifths of the capital stock of the Templor Ranch Oil Company.

TO MANUFACTURE ASPHALTUM.

A Boston company has leased the refinery of the Cleveland Oil Company, at Kern River, on section 6, 29-28, for a period of two years, and will manufacture asphaltum. The lessees are guaranteed 10,000 barrels of oil per month by the Cleveland Oil Company. The refinery has a capacity of 5,000 tons per month. On account of the excellency of California asphaltum other easterners are looking after a chance to get interested. It is said that in the near future an organization of asphaltum manufacturers similar to that of the Independent Oil Producers may be entered into for the mutual benefit of all concerned.

The Union Oil Company's No. 2, Midway Six lease, has a 100-barrel well of 16 gravity oil, struck in a tar sand.

CALIFORNIA DERRICK

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ADVENTURERS AND THE UNWORLDLY.

Fleecing the members of religious and other sects seems to be a favorite pastime of certain alleged promoters, if the daily charges which come up in the courts carry conviction. One conviction is certainly borne in upon the reader who looks at the average charges: these sects must be ready victims. Another adventurer is, apparently, about to be called upon for the inevitable accounting. Henry J. Martens is charged with obtaining money by false pretenses and to have gotten away with no less than $10,700 belonging to one of that sect known as the Menonites. A warrant has been issued for the arrest of Martens, who is said to be "ill in Kansas."

When WILL the public in general wake up enough to look into a proposition before turning over the earnings of a lifetime to some glib-tongued promoter who sells them lands belonging to anybody else than himself? Rufus Wallingford was comforted with the idea that there was always somebody lying around with a "bunch of money" just waiting for him to turn up and get it. Such transactions as are constantly coming to light, in which poor and unsophisticated people are quickly and entirely fleeced, seem to prove Wallingford's views. Which leads to the conviction that the author of Rufus Wallingford's adventures knew human nature from the ground floor up. But, they can't "get away" with it! Wherein is safety for bona fide propositions taken up by honorable corporatious and promoters!

WRONG FOOT AGAIN.

The Oil City Derrick, of Oil City, Pa., is a huge joker. It has just recently started a column showing the productive capacity of the new wells being brought in and for the Kern River field it rates wells starting off with a capacity of 30 to 60 barrels as being 10 and fifteen barrel-wells. The ridiculousness of the statement is so apparent on its face that it is hardly worth mentioning. It is so well known that the average of Kern River wells, good, bad and indifferent, is above 20 barrels that to class the new wells as having a capacity of only ten barrels seems absurd to one possessed of the facts.

Kern River is producing approximately 38,000 barrels of oil per day from about 1,800 wells. Many of these wells are producing much less than ten barrels a day, but hundreds of them are producing more than thirty barrels a day and have done so for years and it is safe to say that not one in one hundred of the new wells will drop to twenty barrels, unless from some mechanical reason, for many years to come.

Hence the Oil City Derrick is off again on the wrong foot ad infinitum. But the Derrick is Standard Oil.

"PERSECUTION" OF THE STANDARD.

In an article entitled "Governments Versus Industries," the Petroleum Review of London, England, shows what it thinks of the attempted curtailment by our Government of the monopoly of the oil business which the Standard is supposed to enjoy. The Review is a very conservative magazine. In fact, it may almost be said that the Review reports only the movements of such great companies as may be termed monopolies and such as it may for some reason or another be backing, or, opposing. The Review is international in its scope and what it has to say merits quotation. It says that the American Government is persecuting its oil industries, and has shown its hostility to the welfare of the country's petroleum industries by attacks upon same. Following are some of the statements:

"Turning for a moment to America, here also we find that for several years the United States Government has publicly shown its hostility to the welfare of the country's petroleum industry by its continuous attacks—conducted with the aid of the public purse—against the Standard Oil Company. Even the 'man in the street' is familiar with the fight, and though possibly he, like the American Government, cares not what the outcome may be, those associated closely with the petroleum industry cannot but view such a struggle with grave misgivings. . . . Foreign countries have not been unmindful of that 'rift within the lute' at home. France has now practically forbidden American crude oil to enter its ports and rumor has it that more than one other European country, whose trade treaties with America shortly expire, will follow the lead made by France. These facts alone should be just cause for the American Government to stay its hand of persecution ere it be too late."

We think the Standard will weather the storm. There are ways and ways of which our contemporary wotteth not, for the Standard to continue its precarious existence and which might somewhat jolt the cerebral membrane of our esteemed British contemporary if it did "wot," somewhere in its law abiding sense. The Standard is healtby enough; trust it to make the necessary caupaign against Governmental prosecution and persecution, if there is anything going on which will really harm it.

THE GUN PLAY IN McKITTRICK.

Complications more or less serious have followed the declaration of Secretary Ballinger that the withdrawal orders of President Roosevelt had no law to support them, and that legislation by congress, such as is uow pending, was necessary to take public land from the open rolls of entry.

This declaration has been seized upon by various persons and companies that have the means to maintain armed guards upon the lands desired, and made the justification for their seizing and holding by shotgun-power the lands so taken. It is claimed for them that they merely "locate" like any other prospector. The injustice of this attitude may, however, be seen by any fair-minded person, and it is hoped that the withdrawal law, favorably reported upon by the Public Lands Committee will right matters and settle the trouble. It is said that several thousand acres of oil bearing lands have been located on since the Interior Secretary's declaration, in the vicinity of McKittrick, and grave injustice may be done if the lands so seized are given to the present holders.

A report reaches us from Cobalt, Northern Ontario, that crude petroleum has been discovered about six miles from there. No actual flow has as yet been secured. It is probable that the region of discovery will be developed rapidly as the Canadian Government has provided a bounty of 1¼ cents per gallon on every barrel of crude petroleum mined in the Dominion.

R. E. McCray and C. E. Hailstone, says a Maricopa report, have leased the whole of section 14, the southwest quarter of 15 and south half of 10 and south half of 12, all in 11-23, to the American Oilfields Company, which will put down wells on every quarter and will lay a water pipe line from Santiago Creek to the scene of its operations.

SOUTHERN PACIFIC SAID TO HAVE INSPIRED BALLINGER ORDER.

A report to the effect that the Southern Pacific Railroad Company was responsible for Secretary Ballinger's famous withdrawal order of September 27, 1909, is being given wide circulation by oil papers. The stated object of this move, which is said to have been accomplished through the political power exerted by the machine of the S. P., is to defend itself against the jumpers who have located upon its lands in the Coalinga district. We quote from one of the publications in question—(The California Oil World):

"It is generally believed that much of the railroad's land from one end to the other was obtained by fraud and corruption and that the sections in mineralized districts are especially open to attack. It cannot be denied that the express intentions of the government and the expressed expectation of the railroad at the time the lands passed to the corporation was that only lands of an agricultural nature should be granted. An ordinary knowledge of what transpired makes obvious the fact that the railroad was not to be permitted to have lands valuable for their mineral property.

"For those reasons it is declared the Southern Pacific feels insecure in its ownership and as a part of the means of retaining possession it exerted its political influence upon the administration and caused the withdrawal of all lands from entry as has been outlined.

"T. S. Minot, attorney for the jumpers, is soon to visit Atlanta, Georgia, for the purpose of consulting Hon. Hoke Smith, once secretary of the interior, who has been retained as counsel for those who have filed upon the territory claimed by the railroad."

Such charges are scandalous. The fact that they strike at the United States Government should entitle them to an airing, if they will stand it, and if not, it is to be hoped that the same paper continues to give them publicity until something is done to remedy the alleged rotten conditions.

CONSOLIDATION AND CLOSED-DOOR FOR INDEPENDENT AGENCIES.

From Our Bakersfield Correspondent.

The consolidation and closed-door policy for the Independent Agencies was determined upon in the face of some opposition at the largest meeting of oil producers ever held on the Pacific Coast, on March 1st. All companies producing at present which do not file application for membership in the associations on or before May 15th, 1910, will be forever shut out. More than two hundred persons attended the meeting and the vote for consolidation was unanimous.

The resolution passed by the members of the meeting, in which they declare for the closed-door policy, is as follows:

"Resolved, that it be the sense of the Kern River and Coalinga Oil Producing Agencies, that no company or individual now producing oil in the State of California be admitted to membership in either of the said Agencies unless such application or membership shall be filed on or before May 15, 1910.

"And be it further resolved, that no company or individual who may hereafter engage in the business of producing petroleum in the State of California be admitted to membership in either of said Agencies unless application for membership be filed on or before the first well is drilled upon the property of said company or individual."

Hence it will be seen that with the exception of new operators, all applicants for membership are excluded after May 15th. A vigorous campaign among independent producers who have not made application to join the Agencies yet, will be carried on from now until the date of closing. Even those whose entire production is signed up for a period of years will be urged to sign up their oil subject to those contracts. From this it will be gathered that the action taken was not quite as drastic and upheaving as was heralded. One of the peculiar features of the meeting was the reversal by S. A. Guiberson of the opinion formerly held by him. He arose and pleaded for the open door. H. H. Welch retained his originally expressed opinion that the doors should not be closed. The question as finally voted upon was: closing the doors to keep out all who declined to participate in the risks. As the doors are always to be open to new operators, there has been a great amount of talk over practically nothing. The vote was necessarily in favor of the closing.

The Agencies, together with the Union and the Producers' Transportation Companies, have storage for 6,000,000 barrels of oil with but actually 2,000,000 barrels above ground. L. P. St. Clair stated that the Producers' pipe line from Coalinga to Port Harford is nearly completed and that by the tenth of the month would be discharging Coalinga oil at the coast. He also said that storage capacity at Kern River was about 700,000 barrels.

An arrangement was secured by the financial committee whereby certain banking institutions will loan 50 per cent of the established market value of oil in storage on certificates issued by the Producers' Transportation Company to the Agencies, they to distribute the funds to those companies who desire to get action. The loans will bear 6 per cent interest.

The fact that the action taken at this meeting was not technically binding and must be approved by the regular meetings of the respective Agencies, which occur on the second Wednesday and Thursday in April, influenced the members in favor of the time delay to May 15th, same having originally been set for April 1st.

A resolution was passed calling for the consolidation of the Kern County and Coalinga Agencies, and another resolution was passed asking California's Congressional Representatives to assist in passing a bill requiring the United States Navy to use oil for fuel.

The Asphaltum refiners also met in Bakersfield and appointed a committee to devise plans for organizing along lines similar to the Agencies. The "get together" movement is becoming more and more powerful in all the industries connected with petroleum in California.

RESERVE FUEL OIL SUPPLY FOR U. S. NAVY.

A proposition has been submitted in the senate in the form of a bill, introduced by Senator Gore of Oklahoma, "by request," which provides for the creation of a reserve oil-fuel supply for the United States navy. Under the terms of this measure the Secretary of the Navy is authorized to proceed immediately upon the passage of the act to the acquisition of such land as is necessary and suitable adjacent to the oil fields of Oklahoma, for the erection of tankage for the reserve oil-fuel supply for the United States navy.

It is sought to be accomplished through the terms of this measure not only what it will cost to acquire land for storage tank purposes, but also the cost per barrel of the construction of the plant and the cost per mile in the construction of the lines, specifying the size of the pipe laid; also the average cost per barrel of the oil acquired for previous months.

Provision is made for authorizing the Secretary of the Navy, with the approval of the President, to appoint an assistant whose duties shall be the acquisition of the reserve oil-fuel supply for the navy, and its agent is directed also to construct the tankage for the reserve fuel-oil supply in the mid-continent oil fields, and is also directed to make reports covering the various propositions suggested above concerning the cost per acre and per barrel of construction. It is also provided in the bill that if it shall develop that "by combination and conspiracy an unfair transportation charge is demanded for transporting this oil from the reserve coast forts," the Secretary of the Navy is authorized and directed to construct a suitable pipe line to the Gulf coast.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

Coalinga produced 1,430,489 barrels of oil during January.

The Coalinga National Petroleum Company, section 8, 20-15, is down 2,400 feet with 10 inch casing and is doing well.

The Gold Tip Oil Company is said to have gotten a showing of oil and some gas at a depth of 700 feet. The Gold Tip is located on section 2, 20-14.

The Baird Oil Company, section 24-22-18, is doing well with both holes, 1 and 2. The east slope of the Kettlemen hills is still causing comment.

The K. T. & O. is drilling section 31, 20-15.

Turk, a station eight miles east of Coalinga, is receiving the rifled pipe for the Associated Pipe Lines Company's pipe line from Coalinga to McKittrick. The pipe is being rapidly hauled to the scene of construction from Turk.

The Standard's second well, situated in the center of section 30, 32-24, continues to produce heavily.

The California Coalinga Oil Company, on section 8, 20-15, now has a daily production of 300 barrels from its well No. 2.

The Hub Oil Company's well is 2,500 feet down and showing nicely.

The Jefferson Oil Company, section 6, 21-15, is reported to have installed a large boiler plant to operate from a central station. It is also said that the company is considering installing an air compressor to operate its well.

The directors of the Amy Oil Company have levied an assessment of 10 cents per share, date of delinquency of which is March 28, sale of delinquent stock being set for April 18. The managers of the Company announced that one well was doing better than 200 barrels daily.

S. A. Guiberson, Jr., has been elected a director and general manager of the Coalinga Royal, succeeding Jean Strong, resigned.

The directors of the Mohawk have levied a small assessment to be able to finish their well, which is in good sand at a depth of over 4,000 feet.

Many wells on the Spinks Crude lease are being redrilled.

De Luxe is doing finely with No. 2, being down below 1,300 feet.

A new board of directors was elected by the Fresno-San Francisco Oil Company. The board in turn elected officers. The new order is: New Directors: W. K. Washburn, J. R. Hickman and C. J. Craycroft of Fresno; G. F. Patterson, Bruce Smith, C. M. Boles and Albert Rubenstein of Los Angeles. The new officers are: G. F. Patterson, president; C. J. Craycroft, first vice-president; J. R. Hickman, second vice-president; Bruce Smith, secretary, and Albert Rubenstein, treasurer.

The American Petroleum Company produced 1,250,000 barrels of oil last year from six wells, only four of which were flowing. Average daily production of each well was 575 barrels. The American Petroleum is considered the biggest producer in Coalinga. Its oil is handled by the Producers' Agency. The company has recently been incorporated with the American Oilfields Company, newly organized with a $25,000,000 capitalization.

The Coalinga Security Oil Company, recently organized with $300,000 capitalization, will operate on the southwest quarter of the southwest quarter of section 8, 20-15, which it is said to have purchased at $2,500 per acre. The first well will be drilled with a rotary.

Both the British Consolidated and Twenty-two Oil Companies will shortly become members of the Agency.

SHEAR PETROLEUM COMPANY GETS GOOD WELL IN TEMPLOR.

Advices from the Templor district state that the Shear Petroleum Company has brought in a 125-barrel well, its No. 1, at a depth of 288 feet only. Wells in the Templor district are generally of no great depth and producers are very pleased to get a well with such a showing as that of the new Shear. The well was only six days in the drilling and cost but $1,200. It was drilled with a portable rig, which was immediately moved and set up for No. 2.

The Shear Petroleum Company consists of forty acres in section 36, 29-20. It is mostly owned by David Shear, an ex-Pennsylvanian, and D. J. Gonyer of the Dillon Oil Company is its secretary.

DILLON BOUGHT OUT.

The Dillon Oil Company, located on the same section as the Templor Ranch Oil Company, has practically passed into the hands of H. H. Argue, an ex-Bradford, Pennsylvania, man. Mr. Argue bought a controlling interest by steady share purchase. Changes made in the directorate and official role of the company are as follows: Resigned directors: Sam Sweitzer, Joe Etauh, P. J. O'Brien. Elected to the board: H. H. Argue. Drew Pruitt, of Los Angeles, president. D. J. Gonyer, formerly secretary, is now a director and general manager. Dillon well No. 2 has been started.

NEW OIL FIELD—MAYBE.

A report from Bakersfield says that there is an oil field extending clear across the Beale ranch which Mr. John Kerr has been examining, presumably for Messrs. Doheney and Canfield in the interests of the American Oilfields Company.

Mr. Kerr is reported to have said that he found oil seeps that no one knew of before this time and which had escaped even the eyes of the "vaqueros" who have ridden the ranch for years. The sand discovered is declared to be the "Newhall" sand and is said to "hug the granite all the way." It is possible that the owners of the ranch may have a big thing.

BEAR CREEK OIL STOCKHOLDERS DISAPPOINTED.

The American Oilfields Company has not taken advantage of their option on a portion of the Midway holdings of the Bear Creek Oil Company, most of the stockholders of which reside in Santa Maria. It was expected that 320 acres of land would be sold under the terms of this option, at $1,000 per acre. The option lapsed and the anticipated melon, which was to have been cut immediately upon the sale of the property, will not be cut—just yet. However, the company can get along without this particular fruit at present, as their well is doing a nice, steady little jog which will probably continue as long as any of them.

VENTURA OIL DEVELOPMENT DRILLING TWO WELLS.

The Ventura Oil Development Company, operating 640 acres of land near Piru, Ventura county, is drilling two wells, one of which is down over 400 feet and the other about 375 feet. A productive sand is looked for in well No. 2 at about 700 feet. Well No. 1 is in the deeper portion of the property and the main sand is looked for at from 1,800 to 2,000 feet. Oil is of very high grade in this part of the state and commands a high price for refining purposes.

BAY CITY OIL COMPANY.

The Bay City Oil Company, the pioneer oil company in the Midway field, with large holdings there, paid its fourth dividend last month. The dividend amounted to .20 per share,—$20,000 all told. The former dividends amounted to $10,000, $30,000, and $30,000, respectively. The dividends are largely from the sale of land, each having been made after payments for same. The Bay City's land sells in the neighborhood of $1,000 per acre.

JEWELL DRILLING.

The Jewell Oil Company, which recently took over the Emerald lease of 30 acres in the Western portion of the Kern River district, will soon have its eighth well completed. A depth of 800 feet has already been reached and progress at the rate of 30 feet or more is being made daily. The well will probably be producing before April 1st. Another well is to be started immediately and the company expects shortly to run two strings of tools. There is room for about twenty more wells. The average depth is about 1,200 feet with better than 150 feet of sand in the main body. It is expected that dividends will be started within the next four or five months. The company is being financed by the Lincoln Mortgage and Loan Company, of San Francisco.

ANOTHER "REVOLUTIONARY DEVICE."

C. H. Tobey, a Los Angeles man, says that he has a new device which may revolutionize the production of oil wells. A practical demonstration of its working was made during the last month. Mr. Tobey explains his new device in a very clear manner:

"When I was there," said he a few days ago, "I saw a very interesting demonstration of my new device for lifting oil from the hole. We had put one of those lifting chambers in the big sump hole and had run the pipe up the hill about 150 feet and when we turned the stream into the lifting chamber the way it shot the oil out of the top of the pipe was a caution.

"At this point I am having them connect with the second lifting chamber and will then run the pipe up about 200 feet further on the hill with the idea of seeing if the second lifting chamber will catch the oil and continue to lift it the same as the first one does.

WELL NO. 2, OF THE AMERICAN PETROLEUM COMPANY AT COALINGA.

Situated on the north eighty acres of the company's property on section 31, Coalinga. The well is flowing between 700 and 800 barrels daily through three pipes. An excellent, steady well. (Photo by Pillsbury, San Francisco.)

"If this device works, as it looks as though it would, it will entirely revolutionize production. It would practically result in making the same thing as gushers, reducing the cost of operating to a minimum, and the production to a maximum."

WILL ISSUE DUPLICATE STOCK CERTIFICATES FOR THOSE LOST IN SAN FRANCISCO FIRE.

Judge J. W. Mahon handed down a decision during the latter part of February, in the suit of C. S. Young against the Illinois Crude Oil Company, giving the order that the corporation issue duplicate certificates to Young for the 7,667 shares of the capital stock which Young lost in the San Francisco fire in 1906. The suit was not contested by the Illinois Crude Oil Company. The suit is said to have been in the nature of a test.

C. J. Yancey is reported to be considering the sale of some of the Drake-Barnsdall-Yancey holdings in North Midway and the McKittrick front, to Eastern capitalists.

SANTA MARIA BREVITIES.

The County Oil Inspector reports very good results in shutting off water in the Union's wells on the Newlove tract and also on the Graciosa property, saying that much more oil is saved and much less trouble is met with from water than formerly.

The Gem Oil Company, organized entirely hy Santa Maria capital, has heen incorporated, giving Santa Maria as its principal place of husiness. Capitalization, $200,000. Directors: M. Fleisher, J. W. Atkinson, E. W. Clark, Paul O. Tietzen and J. F. Goodwin.

The Foxen Oil Company has levied an assessment of one-half cent a share on its capital stock.

The Western Union is reported to have five strings of tools working.

The Old Mission well in Cat Canyon is down 900 feet and still going.

Brookshire's No. 5 is producing 700 barrels daily; No. 7 has heen cemented off and looks promising, and No. 9 looks to be a hig well.

The Brookshire and Pinal Oil Companies have heen sued hy Jaun B. Arrellanes for $55,000 damages, $50,000 of which is for a pipe line right of way which the companies have maintained over his property for four years, the remaining sum for seepage loss from pipe line and pollution of water supply for the livestock of Arrellanes and his tenants.

The Rice well on the Palmer tract is now down ahout 1,000 feet.

F. J. Burns has resigned as manager of the Brookshire and will hereafter confine his activities to Bohhy Burns Oil Company at McKittrick.

Two large parties of stockhrokers and newspaper men, numhering in all perhaps sixty members, visited the Santa Maria fields early this month. They went as guests of the Palmer and other properties in the Cat Canyon district.

Dome on section 23 and Dome No. 1 on the Tognazzini tract are doing well.

The Cohlenz is down over 2,600 feet with 8 inch casing. The formation shows up very well for a near future strike.

The Associated's well on the Williams in Cat Canyon is down 2,800 feet, 8 inch casing. They have cemented to shut off the water.

San Lucas No. 1 is doing well.

The Blue Grass Oil Company, composed of Blue Grass, Ia., husiness men, is operating a 40-acre royalty lease from the United Oil Company on section 14-31-22, hetween the Brookshire and the Bear Creek.

FORMER MAYOR SCHMITZ HAS DRILLING DEVICE.

Eugene Schmitz, former Mayor of San Francisco, is reported putting down a well with a rotary drill on section 4, 31-22, in the north end of the North Midway field. The Santa Fe is reported hack of a "jumper" on this location, who has already spudded in. The Schmitz outfit had not started when the supposedly Santa Fe-hacked men were at work, but as the rotary makes much faster time than the Standard rig there is a good chance for the former to overcome the lead of the latter. A merry race is reported on. Schmitz is the manager for the M. & S. Drill Company, which has two patents on rotary drills for which very great feats are claimed. His company has taken contracts for the drilling of sixteen wells at Maricopa and south of the Sunset field. In case the new rotaries do what is claimed for them they are likely to revolutionize drilling. Following is an idea of the new device gained from a contemporary:

The M. & S. has a fish-tailed device by which the bit can he released with a spear and hauled to the surface, to he replaced with a sharp hit. In the old style rotary it was necessary to pull the entire string of pipe to accomplish this, which takes a great deal of time. Another device which makes the rotary strong where it has always heen weak is a hit mounted on a rigid stem which will drill through hard rock, hringing out a core. This is accomplished hy means of hollow, file-like teeth through which are fed small particles of adamantine which assist in the cutting.

The great advantage of a rotary in a gas country is the pressure it exerts.

The California King, which encountered gas that effectually stopped operations on its lease on the Yellowstone at Maricopa, has contracted with the M. & S. Company to finish the hole with the rotary; and the Lady Washington on the same section, also leasing from the Yellowstone, will utllize the same rig when the King well is finished.

GENERAL NOTES.

J. D. Thompson of Pasadena, vice-president of the Premier Oil Company, is authority for the statement that the Premier recently refused an offer of $1,500,000 for its Coalinga property. The Premier is one of the foremost oil companies in the State today.

Dr. David T. Day, of the United States Geological Survey, is reported to have said that there is enough kerosene manufactured in one year to keep one lamp hurning for 150,000,000 years. At that rate we can't all he usIng electrIcity and gas, either in America or abroad.

A small production of oil has heen obtained from a well put down hy a company operating on a part of the property owned hy the Devils Den Consolidated Oil Company. It Is claimed that the oil was reached at a depth of 200 feet and that the well is good for 18 harrels daily.

It is reported that Associated stock will be listed on the New York Stock Exchange as soon as the company is on a dividend paying basis. $1,600,000 in dividends was expected to he declared on the last day of February, hut no action was taken.

Brownstone Siding, Ventura county, is the site selected for the huilding of a refinery to take care of the various light oils of the Big and Little Sespe and Piru and Santa Paula fields. Definite news as to when construction will hegin and other information is withheld so far, hut M. F. Donovan of Santa Paula is helieved to he hehind the deal.

The Standard is declared to be hammering the prices of refined products In Coalinga. We have reason neither to credit nor discredit the report.

The Sudden Oil Company is heing formed hy Lompoc capitalists to develop a 129-acre tract of land adjoining the Union and Orcutt properties. Work will begin on their property at once.

Several of the leading oil companies of Los Angeles county, Cal., have petitioned the hoard of supervisors to appoint an oil commissioner to enforce an oil law passed hy the last legislature. This law provides that an accurate and careful log be kept, showing the exact character and depth of the formations encountered, and also that when wells are ahandoned, they he filled up in such a manner as to prevent water from filtering through the oil formation. The petition alleges that this law is not complied with.

The Golden Gate Oil Company, with a capital of $1,000,000, has recently heen incorporated to operate in undeveloped territory east of Midway, where the company owns 120 acres, and has an option on 520 acres additional. Those promotIng the enterprise are L. A. Crandall, of Los Angeles, and W. E. Buck, J. A. Buck, H. B. Gregg and M. J. Lindsay, of San Francisco. This is a close corporation composed of eleven stockholders, and there is no stock for sale.

As Los Angeles county's (Cal.) share of its pipe-line business for two years the Union Oil Company has forwarded to the supervisors a check for $2,000. The payment Is made on a hasis of 2 per cent of its gross receipts.

The Standard has applied to the city council of Berkeley for permission to erect a plant there which will cost several hundred thousand dollars. They will install five great storage tanks, brick buildings, sheds and other structures, if they receive the permit.

The Coalinga-Port Costa pipe line of the Associated was opened during the early part of the month.

A note from Arroyo Grande says that "the San Luis Bay well at Edna is beginning to show signs."

A press dispatch from Victoria, B. C., says that Japanese newspapers at Osaka, received by steamer "Suveric," publish a story that R. Nakahara, a dealer in vegetable oils, has invented a substitute for petroleum and sold all rights in his invention to the Standard Oil Company. He is said to have commenced experimenting seven years ago, and met with success five years later. Standard Oil officials, it is said, invited him to demonstrate the artificial oil and have made an agreement with him for assignment of his rights in the invention, proposing to erect a big factory near Fukuoka.

It is reported that the Stearns Ranchos Company has sold 500 acres west of the Hale lease at Olinda to the Union Oil Company for $1,600,000. This is considered the biggest sale ever made in Orange county, California.

Important oil discoveries are said to have been made recently in the Imperial valley, the land of early melons, tomatoes and grapes. Near Mecca, in the desert, oil has been found in the clay and sandstone hills four to six miles north. Gas was discovered in the Imperial valley issuing from crevices in a dike of sandstone exposed by erosion of New River about 10 miles west of El Centro. Holes were bored 16 feet deep and gas issued and burned freely at the top of the holes. About 2,000 acres have been located and Riverside capitalists have started to drill an experimental well.

The Salt Lake field is declared to have come down to a daily production of 5,000 barrels, and it is said that there is an almost daily decline in that district. The west end is said to be no good and there are only about 240 wells in the whole district which are producing at present and they average less than 20 barrels the well.

The Rose Oil Company in the Big Sespe district has a good showing of oil.

The Colorado Oil Company of San Diego, which recently bought the Turner property at Whittier for $200,000, has just purchased the Whittier Filmore property for $100,000. Both deals were put through by the same firm.

J. M. Kellerman has quit his operations at Newport Beach after getting down over 3,000 feet with no success. He is reported to have lost many thousands of dollars as well as a year's time.

The Greenlee well, put down 3,600 feet by Pittsburg capital, has been abandoned, no petroleum being obtained. The Union's Bundy well at Westgate has also proved a failure.

The Whittier-Desmoines, in the Coyote Hills, has struck a heavy gas pressure at a depth of 2,600 feet. The Murphy, near by, has obtained oil, but is reported as not giving depth or other particulars.

The Rock Island is reported drilling on its 160 acre tract in the Big Sespe district.

The Montebello Oil Company has given up work in the Repetto Hills and has begun drilling near Barsdale, south of Filmore, Ventura county.

The Standard and Belle Vernon are still operating in the Repetto Hills. Success not reported.

Bookkeeper and Stenographer with exceptional experience in oil and mining accounts, a first class man, desires permanent position. At present with an oil company near Bakersfield. Address, R. H. N., California Derrick, Pacific Bldg., San Francisco.

SUNSET-MIDWAY-McKITTRICK BREVITIES.

The Eagle Creek on section 31,31-23, is perforating the old Midway crude well at a depth of 2,026 feet. The well used to be a 100-barrel producer.

The Mammoth Oil Company, formed to develop the North eighty of the Midway Crude lease, and purchased from the Eagle Creek at $3,000 per acre, has rigs, boarding houses, etc., up and is doing well.

Messrs. Adams Brothers, of Los Angeles, have obtained 20 acres of land near Buena Vista Lake, east of Maricopa, and will develop same later on. The Adamses were formerly in the oil business and are well known, especially in Los Angeles, where they have a pipe business of some size.

The Trader's Oil Company is getting 100 barrels daily from its old well on the recently purchased lease on 23, 32-23. No oil had been expected here, as the well has stood idle since it was brought in, eight years ago.

The Santa Fe well No. 1, section 23, 31-22, has 424 feet of sand with a heavy gas pressure at a depth of 1,159 feet. A good well is looked for.

The American Oilfields Company will drill section 12, 31-22, land claimed by the Midway Oil Company.

The job of cementing Brookshire No. 1 was a failure and the well will be used as a water well for the present, to drill wells Nos. 2 and 3.

The Fox Oil Company is generally improving its holdings in the southeast quarter of 15, 31-22. The Cunningham, near by, which ran an unsuccessful race with the Santa Fe, has a great pressure in its gas well.

The Oleum Development Company has made final payment on the 40 acres of land comprising the south half of the south half of section 4, 31-22, North Midway, and will drill at once. The property adjoins the Coin Oil Company.

The Yancey well on 15, 31-33, is now doing 250 barrels daily on the pump and is free from sand.

The Amber's well on 26, 31-22, has been gotten in shape and does 400 barrels a day when not choked up by the heavy sands.

The Maricopa National Oil Company, A. S. McCleary president, will drill on 50 acres on the northwest quarter of section 6, 11-23, Maricopa, which the new company—just incorporated —recently purchased from P. J. O'Brien and associates.

The Oil Land Investment Company, a short distance south of the Nacirema on section 6, 30-22, has struck the Nacirema oil sand at 750 feet, from which the Nacirema is getting 60 barrels a day.

The Mount Diablo Oil Company leases to twelve other companies and is getting sufficient amount from its royalties to pay good dividends. The last company leasing from the Mount Diablo to be placed upon a dividend paying basis is the Mascot, which recently declared its first dividend.

The developments on this field are so rapid that news is old almost before it reaches the press.

KERN RIVER BREVITIES.

The Twenty-five Oil Company has declared its first dividend to stockholders of 25 cents a share. The Twenty-five has had a long, upward pull, but has a contract with the Associated which makes the future very bright. Dividends are assured.

Only one of the Four Oil Company's twelve wells is producing now, great trouble experienced with water. An air compressor is to be used to overcome the difficulty.

The Big Indian, 26-26-28, is down 500 feet, showing nicely.

The Amurot, between the Del Rey and Monte Cristo, is about to drill up its lease—a small one.

The United Oil Company is getting ready to develop a vast amount of territory, according to a Kern River dispatch. The dispatch is very general and states only that great development is contemplated.

The Vanderlip, section 25-28-27, adjoining the Tejon and Green and Whittier leases, is to be drilled up by the Fox and Garret Oil Company. There are four 100-barrel producers on the property already. The sands are reached at about 1,200 feet.

The K. R. & W. and The Twist, formerly the Olema, have been combined to form the Expansion Oil Company, owned and controlled by Goldfield and Bakersfield oil operators.

The Metropolis Oil Company has purchased from J. B. Wrenn the southwest quarter of the southeast quarter of 36-27-27, 40 acres.

The Exploration has just finished two wells.

The Porter-Reed Syndicate of New York will drill on the southwest quarter of 22-28-28, outside territory.

On the 23d of February a number of men met in Bakersfield and subscribed a substantial sum of money as salary for W. N. Forker, who has been appointed oil commissioner, to protect the oil sands from damage by water.

A consignment of fifteen crates of oil specimens sent to the Los Angeles Chamber of Mines by the Kern County Board of Trade, and the Independent Oil Producers' Agency of Kern River, has been lost by the authorities of the Southern Pacific, the officials being unable to find same but believing it between Los Angeles and New Orleans "somewhere." It will probably turn up soon.

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MONTHLY STATEMENT OF DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES TO FEBRUARY 28, 1910.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Jan. 15, '10	.03	11,400	$ 159,600
Amalgamated	Jan. 15, '10	1.00	50,000	1,400,000
American Pet.	Feb. 1, '10	1.00	126,735	929,960.50
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated	Mar. 1, '07	1.50	446,055	1,548,368.55
Bay City	Feb. 10, '10	.20	20,000	90,000
Brookshire	Jan. 1, '10	.01	5,000	442,500
Caribou	Feb. 15, '10	.25	20,175.75	680,355.99
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Claremont	Feb. 28, '10	.02	10,000	315,000
Coalinga Pac	Dec. 23, '09	.10	6,500	107,250
Columbia	Feb. 25, '10	½&½	9,992.62	264,804.25
Del Rey	May 15, '09	½c	3,927.50	11,782.50
Esperanza	Dec. 27, '09	.02	3,200	49,450
Euclid	Feb. 1, '10	.01	3,500	120,500
Four	Feb. 25, '10	.01	3,000	213,000
Globe	Jan. 1, '10	.01	6,000	81,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	Feb. 20, '10	.02	2,000	472,000
Homestake	Feb. 10, '10	.10	1,000	77,250
Illinois Crude	Feb. 1, '10	.01	2,000	86,000
Imperial	Jan. 6, '10	.60	60,000	1,940,000
Junction	June 1, '09	.01	2,500	20,000
Kern Oil	Nov. 19, '09	.22	22,000	42,000
Kern River	Feb. 3, '09	.10	2,000	98,000
Linda Vista	Nov. 6, '09	.01	3,838.50	65,254.50
Lucile	Dec. 20, '09	.10	2,670.44	42,727.04
Mascot	Feb. 20, '10	.01	5,000	5,000
Mexican Pet.	Feb. 1, '10	.01 1-3	85,616.70	3,391,626.84
Mecca	July 15, '09	.03	12,675	71,825
Monte Cristo	Oct. 15, '09	.03	15,000	340,000
Nevada Co.	Oct. 13, '08	.04	10,000	40,000
Palmer	Feb. 20, '10	.01	18,020.05	232,340.85
Paraffine	Feb. 15, '10	.01	3,000	12,000
Peerless	Sept. 20, '09	.06	6,000	801,000
Piedmont	Aug. 16, '09	.01	3,890	22,987.30
Pinal	Feb. 28, '10	.10	14,992	872,109.50
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Record	Feb. 16, '10	.07½	7,500	47,500
Reed Crude	Dec. 28, '09	.12	12,000	1,124,000
Rice Ranch	Feb. 10, '10	.01	3,000	96,000
Royalty	Feb. 10, '10	.02	400	8,400
S. F. & McK.	Feb. 1, '10	.30	15,000	325,000
Sauer Dough	Feb. 26, '10	.02½	4,987.50	512,316
Sesnon	Jan. 26, '10	.15	15,000	90,000
Silver T O Co.	Feb. 25, '10	.10	7,500	30,000
Sovereign	Jan. 10, '10	.01	5,000	90,000
Sterling	Dec. 15, '09	.25	62,500	747,000
Superior	Feb. 12, '10	.01	5,000	57,500
S. W. & B.	Sept. 10, '09	.01	3,770	41,470
Thirty-Three	Sept. 3, '09	.30	30,000	670,000
Traders	Feb. 15, '10	1.00	14,000.	165,186.50
Union	Feb. 20, '10	.50	124,813	6,243,442.15
United Pet.	Feb. 20, '10	.50	40,375.50	2,138,584.43
Wabash	Feb. 16, '10	.01.	3,000	117,000
West Coast, pfd	Nov. 15, '09	2.00	20,816	62,448
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000

Total dividends paid to date $28,555,290.90
Total dividends paid by the above companies for February, 1910 ..... 550,608.12

LOS ANGELES QUOTATIONS.

Company.	Bid.	Asked.
Amalgamated Oil	65.00	80.00
American Crude Oil Co.	.....	1.10
American Petroleum Co. (pfd)	.....	97.50
American Pet. Co. (com)	72.50	75.00
Associated Oil	46.75	.....
Brookshire Oil	.92	.....
Central	1.49¾	.....
Cleveland Oil Co.	.27½	.30
Columbia	1.12	.....
Fullerton Oil	.....	4.00
Globe	.16	.18
Jade Oil Co.	.34	.....
Mexican Petroleum	.....	1.02

Mexican Petroleum Ltd. (pfd)	.....	68.50
Mexican Petroleum Ltd. (com)	24.25	24.75
New Pennsylvania Pet. Co	.75½	.....
Olinda Land Co. (Oil)	.39½	.42
Palmer Oil Co	1.17	.....
Perseus Oil Co	.....	.35
Pinal Oil Co	.....	13.00
Piru Oil & L. Co	.17	.....
Reed Crude	.31	.....
Rice Ranch Oil Co	.75	.....
Section Six Oil Co	.....	.60
Trader's Oil Co	124.00	127.50
Union	.....	101.25
Union Provident Co	100.00	101.00
United Petroleum	101.50	103.50
West Coast Oil (com)	9.00	.....
Western Union	.....	125.00

NON-PRODUCERS.

Billiken Oil Co	.....	.....
California Midway Oil Co	.33¾	.34
Elk Consolidated Oil Co	.....	.....
Oleum Development Co	.06¾	.....
Provident Midway Oil Co	.....	.....

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

Company.	Bid.	Asked.
Amaurot	...	
Apollo	.12	.....
Associated Oil Stock	46.50	46.75
Associated Bonds 5s	.....	97.25
Bay City	2.00	2.62½
Blue Moon	.20	.....
Brookshire	.....	1.12½
Caribou	15.00	15.25
Chicago Crude	.10	.....
Claremont	1.80	1.97½
Coalinga Pacific	4.50	.....
Dabney	.....	.12
Del Rey	.....	.19
De Luxe	2.00	.....
Enos	1.27½	1.30
Esperanza	2.00	.....
Four	.30	.35
Fulton	1.10	1.25
Gypsy	.28	.....
Illinois Crude	.53	.....
Junction	.40	.....
McKittrick	.20	.30
Monte Cristo	.....	1.90
Nevada County	.25	.....
New Penn. Petroleum	.77	.79
Paraffine	1.45	1.60
Palmer	1.15	1.17½
Piedmont	.15	.20
Pinal	7.50	9.00
Premier	1.37½	1.40
Record	6.00	.....
Royalty	.....	1.25
Sacramento	1.00	.....
S. F. & McKittrick	27.50	.....
Sauer Dough	.....	2.75
Sesnon	8.00	.....
Silver Tip	3.30	3.32½
Sovereign	.....	.25
S. W. & B.	.41	.45
Sterling	.....	3.60
Sunset Monarch	.50	.....
Superior	.....	.30
Turner	.....	.85
Wolverine	.25	.....
W. K. Oil Co	2.25	.....

NEW OIL FIELD.

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THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., April 1910 No. 11

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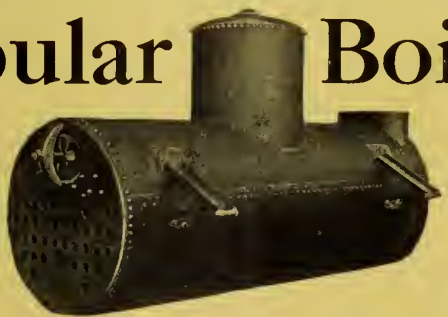

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 San Francisco, Cal., April, 1910 No. 11

The Origin of Petroleum

By PAUL PRUTZMAN
With the State Mining Bureau

INTRODUCTION.

One of the salient features of the workings of the human mind is manifested in the interest which, in all ages, has been taken in the origin of things, and that prime causes are but seldom demonstrated, and never of more than academic interest, seems but little to dull the fervor with which we pursue them. In our day, the origin of the globe and its history have been clearly written by astronomical and geological science, not fully as to details, but so coherently framed that probably no essential part of geological history will ever be successfully attacked. But as to many details, in particular as to the genesis of ore and petroleum deposits, we are still left to speculate, and while it must be admitted that an accurate and unanswerable solution of the latter question, at least, would probably be of no commercial value whatever, the fact that the question maintains its interest for a very large number of people is a sufficient excuse for its discussion.

The papers to follow will be four, and under the following heads: First, a brief discussion of the various stages through which the earth's surface has passed; second, a description of the forces which operate in rock formation, and which are assumed to have taken part in producing and storing petroleum deposits; third, a resume of the theories which have been advanced to account for the origin of petroleum, and an elaboration of one such theory; and fourth, a collection of data bearing on this and other theories.

The first two of these papers will necessarily be of the most elementary character, as only the first principles of geology and mineralogy have any direct bearing on the subject in hand. An attempt will be made, in the two portions to follow, to treat the subject itself in a more scientific manner.

Outline of Geological History.

In the earliest ages of the earth's existence of which we have any definite knowledge, the solid portions of its surface were composed entirely of igneous rocks, that is, rocks laid in place by the action of heat, literally melted. The old nebular theory, so long the basis of geological science, and perhaps even now hardly open to question, assumed the formation of the earth by the consolidation of gaseous matter, heated to a high temperature either originally or in the process of consolidation, and cooling in the lapse of ages, first to a molten and glowing ball, later to a solid mass of heated rock. These rocks—granites, gneisses and other hard and crystalline minerals—constitute the Archean or Primary

MR. PAUL PRUTZMAN
Probably the most widely known chemist under 40 in California. He is truly an Oil Expert

strata, and such rocks, while now mostly overlain by rocks of later ages, and seldom visible except along the crests of mountain ranges, must constitute by far the greater part of the earth's mass. It must be borne in mind that such crystalline rocks have also been formed in all later ages, by what we may roughly designate as volcanic action.

As the earth cooled to a temperature below the boiling point of water, the water which had previously existed as

steam was condensed and, falling as rain, immediately evaporated again, to be again precipitated, starting that endless cycle which has carved from the primitive waste of barren rock a habitat for man. Imagination can hardly picture the violence of the elements which must then have held sway, the clouds of steam torn by raging gales, the torrential downpour of rain, tearing away the flinty rocks and rolling them in muddy floods to a sweltering ocean. How long this period lasted we have no means of knowing, and the millions of years of which the older geologists speak so glibly convey but a feeble idea of the enormous periods which must have elapsed before the earth had cooled sufficiently to permit the beginning of life.

At the same time that the processes of erosion were so actively at work, those of elevation were brought into play. As the skin of a wilting apple is raised into ridges by the contraction of the fruit within, so the cooling and shrinking mass of the earth forced into a smaller dimension the solidified outer crust, crumpling it into ridges and valleys, twisting, overturning, contorting and breaking, while as each mass was raised above the level of the ocean, the rain and flood ground it into powder, to be washed into the sea where it settled into beds of clay and sand, these to be again raised and again ground away in the perpetual round of elevation and erosion.

The secondary or Carboniferous period is usually taken as beginning at about the time when organic life made its first appearance. Starting with the simplest forms of marine animals and seaweed, in the lapse of ages the primitive developed into more complicated forms, and as conditions became more favorable, by reason of the continued lowering in temperature of land and water, fish, shell fish and crustacea appeared in the ocean, and on land snakes, lizards and ferns. In the highly tropical temperature of this age (by some estimated at 150 or even 180 degrees F.), and in an air saturated with moisture, and containing a high percentage of carbonic acid, vegetation would have been expected to flourish, and we know that, in fact, both animals and plants reached a size which almost staggers the imagination. It was during this period that the coal measures were laid down, and when we consider the enormous masses of vegetation which the great rivers of those days must have piled in the swamps and lagoons, to half decay in the steaming atmosphere, to be buried beneath masses of clay and compressed into what we now know as coal, we realize that these coal measures, great as they are, cannot be more than scanty remains of what once existed, before ages of erosion had torn the balance from their resting place and scattered them in the ocean.

During the early part of the Tertiary period, forms of animal and vegetable life with which we are familiar began to make their appearance, and the tropical climatic conditions gave place to others more nearly resembling those under which we now live. The dense swampy fern forests of the secondary age were replaced by dryer and more open groves of solid timber, and with the passing away of the fern forests, conditions favorable to the formation and accumulation of coal also came to an end, and while the sparser vegetation of that day accumulated, and indeed still accumulates in some parts of the world, these deposits are in almost all cases more mixed with clay, and having been subjected to heat and pressure for a shorter time, have a more woody character, and are therefore classed as Lignites rather than as true Bituminous Coals. It was during the Tertiary period that conditions favorable to the formation of petroleum (according to a theory to be developed in a later paper) commenced, and have existed up to the present.

The forms of higher animal and vegetable life, such as we now see about us, mostly came into existence during the later portion of the Tertiary period, which, like the two which preceded it, was of very great duration, a duration which it would be rash to measure in years. Man is supposed to have come into existence, in his present form at least, early in the fourth or Quaternary period, that in which we are now living. During this time, that is, the later Tertiary and the Quaternary, natural conditions must have been largely such as we now enjoy. A wave of great cold did, it is true, for some reason which is not now very clear, pass over the earth, bringing the polar ice fields down almost to the Ohio River, but allowing for some fluctuation, climatic conditions, distribution of temperature zones, and of land and water, appear to have persisted in about their present condition for a very long time.

Granting that the entire mass of the earth was originally molten, it is evident that the first solid rocks must have been such as would be formed by the cooling of a fused magma; that is, igneous or crystalline. But when water began to fall, and in consequence erosion and sedimentation commenced, the formation of all the other varieties of rock (excepting probably limestones) also began, and as the formation of crystalline rocks has continued, locally at least, through all ages, we cannot refer a rock to any given age by reason of its mineralogical character, but solely, if at all, by examination of the remains of animals and vegetable life which it exhibits. The patient labor of many students has pieced together various orders of arrangements from all parts of the globe, until we now possess a very complete table by means of which, finding some characteristic fossil in a rock, we may with confidence announce the age in which this rock was laid down. But lacking such aid, the character of the rock itself offers no certain indication of its age, as while the bulk of the older rocks have been more or less indurated by long continued heat and pressure, some of the softest clays may with certainty be classed as Archean, while we can see crystalline rocks in process of formation in regions of volcanic activity.

Fortunately, however, most sedimentary rocks contain shells, bones or other fossils by means of which their age may be determined, and for our present purpose these are the only ones with which we need concern ourselves, as petroleum is never found in, and but seldom in the neighborhood of, igneous or metamorphic rocks.

(To Be Continued.)

CRESCEUS OIL COMPANY.

Cresceus is at present in a very excellent condition. Six wells have already been drilled and are producing at the rate of 70,000 barrels a month, insuring a monthly dividend of at least 1 per cent. The seventh well is being drilled to a greater depth than the others in search for the gusher sands. The Cresceus adjoins the Mascot and Mt. Diablo Oil companies in the Midway field, and its property is considered among the very best. During the last week its shares were traded in to the extent of $22,000. The Spellacys are at the head of this company and the best management is therefore assured. The company is being financed by the Lincoln Mortgage and Loan Company of San Francisco.

S. W. & B. OIL COMPANY.

S. W. & B. continues to hold the attention of buyers on the San Francisc Stock and Oil Exchange. Stock holds at between 70 cents and 80 cents per share. Two wells are being drilled on their forty acres on section 6, 20-15, Coalinga, which will be finished in all probability in about seventy days. L. P St. Clair, president of the Independent Oil Producers; C. J. Berry of the Ethel D.; Messrs. Tim and Pete Spellacy, Holmes Henshaw, Walter Snook and others are prominently identified with this company. Present earnings of the S. W. & B. are capable of paying 24 per cent. per year dividends upon its capital stock.

FEBRUARY OUTPUT OF CALIFORNIA'S OIL WELLS.

The average daily output in California for February was 161,983 barrels, a total output for the month of 4,515,560 barrels. This is a normal monthly output as the February production is short two days of the average monthly production. There were no great variations from the January figures. The following is a detailed table showing the production by fields and districts:

San Joaquin Valley.

District.	Production.	Average.
Coalinga	1,100,000	39,286
Kern River	1,001,000	35,750
McKittrick	432,000	15,428
Midway	380,000	13,571
Sunset	189,000	6,750
Totals	3,102,000	110,785

Storage.

Coalinga	2,068,000
Kern River	14,700,000
McKittrick	200,000
Total	17,018,000

Coast Fields.

District.	Production.	Average.
Santa Maria	525,000	18,750
Lompoc	52,000	1,857
Cat Canyon	51,000	1,821
Summerland	6,200	221
Edna (Arroyo Grande)	1,960	70
Watsonville-Sargents	4,200	150
Total coast	640,360	22,869

Southern Fields.

District.	Production.	Average.
Serman-Salt Lake	236,740	8,435
Whittier	56,788	2,028
Coyotes	27,000	965
Los Angeles City	39,732	1,419
Newhall	9,940	355
Ventura County	28,000	1,000
Fullerton-Brea Canyon	372,000	14,000
Puente	3,000	107
Total	773,200	28,329

The amount of oil in storage is declared by reliable sources to be very small, half a million barrels being given as the greatest amount probable, which is stored outside the San Joaquin valley. Consumption during the month kept even with production, in spite of the new producers in Midway.

EXPORTS.

The following table gives the exports of the United States for February, with comparisons for the same month of last year:

Crude.

1909	4,789,037	237,003
1910	9,561,885	248,715
Increase	4,772,848	11,712

Naphtha.

1909	408,983	63,089
1910	4,260,759	313,090
Increase	3,850,776	250,001

Illuminating.

1909	69,098,628	4,628,413
1910	66,176,916	3,975,150
Decrease	2,921,712	653,263

Lubricating and Paraffine.

1909	10,412,960	1,286,160
1910	10,970,465	1,409,124
Increase	557,505	122,964

Residuum.

1909	3,604,300	118,966
1910	8,241,981	306,565
Increase	4,637,681	187,599

Total Mineral Oil.

1909	80,313,908	6,333,631
1910	99,212,006	6,252,644
Difference	18,898,098	80,987

AMERICAN OILFIELDS HAS NEW WELLS.

Four wells owned by the American Oilfields Company have reached the producing sands, three of them on section 36, 31-22 (Midway) and one on section 16, 32-23, the latter being good for at least 200 barrels daily. Of the three wells on 36, two reached the sand at 1200 feet and are not yet finished. The third, No. 73, on the southwest quarter, entered the sand at 970 feet with a single 12-inch string and immediately started to flow 22 gravity oil. This production was entirely unexpected at such shallow depth. The well has been capped and is used to supply fuel for the other wells drilling. When opened for the purpose of filling the fifty-barrel tank it fills it in forty minutes; that is, it is flowing at the rate of 75 barrels an hour or 1800 barrels per day. While this report has not yet been authenticated, the authority for it is very good, indeed.

The American has two wells drilling already on the land recently purchased from the Monte Cristo Oil Company. A depth of 2550 feet has been reached on the northwest quarter of 31, 32-24, making the well deeper than the big Standard well on section 30. The well on section 32 is down 2030 feet and shutting off the water. The same superintendent who was in charge of the lease under the Monte Cristo people has been retained to look after the property.

DEEP WELL THOUGHT TO HAVE STRIKE.

The Burroughs well, south of the Kern River, is said to be a good light oil producer, contrary to declarations of the Santa Fe, who own it, that there was nothing in the hole. It is said that the Santa Fe is tying up as much land as it possibly can in the near vicinity, and that, during the last few days almost all the land adjacent has been secured by them. This land could not possibly be desired for any other purpose than that ascribed—development for light oil. The hole is 2465 feet deep and is said to have gone through as many as three different sands, no one of which was thought satisfactory. In case the discovery of light oil has actually been made, there would of course be a rush for the scene by independents and the railroad could not then secure the whole thing, which would undoubtedly be their natural desire. Oil men are keeping their eyes on this tract.

BAKERSFIELD TO HAVE OIL EXCHANGE.

An oil exchange in Bakersfield, with a membership limited to 100, is being launched in Los Angeles by Bakersfield representatives. Half of the members of the new exchange are expected to be recruited from the latter city, and it is probable that they will be, as the memberships are being rapidly subscribed for. Representatives will also visit San Francisco, according to a well-founded report, before the full roster of names is made up.

A Remarkable Project—Oil Will Be Transported 2,000 Miles

GREAT PIPE LINE WILL BE CONSTRUCTED.

Will Cost $11,000,000.

A great pipe line, 8 inches in diameter and 2000 miles in lengtb, binding the oil fields of California with commercial enterprises in Arizona and running as far south as Cananea in Mexico, bas been projected by the most powerful oil interests in the State of California, with E. L. Doheny, C. A. Canfield, T. A. O'Donnell, W. L. Stewart, L. P. St. Clair and other well-known oil men behind it.

The capitalization of the company is given as $25,000,000; number of shares, 250,000; par value, $100. The directors of the company are E. L. Doheny, C. A. Canfield, T. A. O'Donnell, W. L. Stewart, L. P. St. Clair, Norman Bridge, J. S. Torrence, S. W. Morsebead, Charles Wellborn, J. M. Danziger and Lewis H. Andrews, practically an aggregation of the large independents in the State. These men are known in oil circles tbe world over.

Tbe purpose of the company is to place the oil market in Arizona and Mexico upon an absolutely stable basis, and one wbich will be enormously profitable to all. The territory about to be invaded already uses 300,000 barrels of California oil monthly as fuel, and is said to pay transportation charges to the railroads of $1 per barrel. Once the pipe line is in operation, there will undoubtedly be a market for at least 500,000 barrels per month more than is consumed at the present time, a total consumption of nearly 1,000,000 barrels monthly being expected. That the company will be able to transport oil much more cheaply for the consumers than the railroads, is obvious. The company's profits will probably enable the line to pay for itself inside of two years after its completion.

It is said that the smelters of Arizona will be able to use oil, recent patents having been obtained which, it is claimed, do away with the difficulties heretofore encountered in the use of oil. If such is the case, a consumption will be assured which will add materially to the present demand.

It is probable that Maricopa will be the main station from which oil will be started. The main office will be in Bakersfield. The line will probably cross the Tehachapi, paralleling the railroad; will cross the Mojave desert, passing through Barstow and reaching into Bengal, Parker, Phoenix and Benson, and run on into northern Mexico, where the Greene-Cananea copper mining and smelting plant would be glad to displace Texas fuel with California fuel. It is said that the line will run through Tombstone, Bisbee, Douglass and other oil consuming centers. The enormous expense attending such a project can be imagined.

Its successful completion is foreordained and tbe greatest step in recent years has been taken to assure a mammoth consumption and a good price for the California producer. With such men as those behind this project, there seems little reason to doubt that its future is assured. In regard to the founders we quote Mr. Frank Oughton, formerly a Los Angeles oil man, now of San Francisco:

This corporation brings into still closer relation the officials of the Union Oil Company, American Oilfields and American Petroleum companies, the Independent Producers' Agency and Transportation Company, and the independent sales agencies of Kern County and of Coalinga. With the exception of the Doheny companies, these interests have already been closely affiliated. The combination with the Doheny interests and their $15,000,000 American Petroleum and $25,000,000 American Oilfields companies, almost marks an epoch in the oil industry of California. It means practically the cohesion of all the oil interests of the State with the exception of the Standard and the Associated, and places the industry

Route of Proposed California-Arizona Pipe Line

on a plane broad and strong beyond almost the dreams of the most optimistic believer in the future of the oil industry of this State. It strengthens the position of every oil company in California and opens up magnificent possibilities for the future. It is a splendid tribute to the foresight of the pioneers in oil production here, who, in spite of the heart-breaking disappointments which they were compelled to face in the beginning, have persevered in tbeir belief of the ultimate success of the oil industry of California; have expended time, energy and money in its upbuilding, and now have the satisfaction of witnessing its marvelous growth; of seeing the State at the head of the oil-producing districts of the world; of hearing the cry for oil and still more oil, and of seeing the steadily increasing stream of wealth pouring into California in exchange for the streams of oil which are making possible the establishment and growtb of many industries and the more economical operation of many others—wealth that has made themselves and their friends rich beyond even their most optimistic hopes.

EDWARD L. DOHENY.

Among all the big men of the oil industry in this part of the world probably no one man is quite so prominent at this time as Edward L. Doheny. Mr. Doheny is one of the pioneers in the oil producing business of this State and has been eminently successful in his enterprises. Mr. Doheny does not attempt small things. The enterprises he undertakes are all of considerable magnitude. He is president and is reputed to be by far the largest individual stockholder in the Mexican Petroleum Company, the Mexican Petroleum Company, Limited, the Huasteca Petroleum Company, the Mexican National Gas Company, the Mexican Asphalt Company, the American Petroleum Company and the American Oil Fields

Company, Limited. With the exception of the American Oil Fields, which has been only recently organized, all of the others bave been very profitable for the stockholders.

The Mexican Petroleum Company is capitalized for $10,000,000, the Mexican Petroleum, Limited, for $50,000,000, the Huasteca Petroleum Company for $15,000,000, the American Petroleum Company for $15,000,000, and the American Oilfields, Limited, for $25,000,000.

It takes more than an ordinary man to found enterprises of such magnitude and carry them through to success without a slip, and the wonderful executive and financial ability of the man can be best gauged by his accomplishments.

Like all great "captains of industry," he has the faculty of selection in his choice of the men with whom he surrounds himself. With Mr. Doheny at their head, the men who form the directorate of his companies are among the most astute financiers of the country. He has the faculty of inspiring loyalty in a marked degree in those directly connected with him, whether in positions of large or small capacity.

It goes without saying that Mr. Doheny could not have made these various companies so successful, and so profitable for the shareholders, without making great wealth for himself, and he is reputed to be a millionaire many times over. His handsome and almost palatial home in Los Angeles is one of the regular sights for the tourists, and tbe property is estimated to be worth in the neighborhood of a half million dollars. The guide never fails to tell the tourists that this wealth was amassed through the medium of oil. Like all strong and successful men, Mr. Doheny has his detractors; those who are envious of his success and forgetful of the great ability that contributed to it. But the fact remains that those who followed his lead and joined with him in his enterprises have made large sums of money that they would probably not have made otherwise, and it is because of this that Mr. Doheny finds no difficulty in securing the necessary capital to found enterprises requiring millions of dollars to establish.

PRODUCERS' PIPE LINE.

Work on the pipe lines of the Producers' Transportation Company has progressed very rapidly and in consequence tbe line from the Midway field to Junction—the point from which the Sunset, Midway, McKittrick and south field oil meet that from Coalinga on its trip to the Coast—is almost completed. It is safe to say that before the month is over Midway oil will be running to the Coast as rapidly as it can be pumped through the new line. The four 55,000-barrel tanks owned by the Producers' Transportation Company are filled with oil from the Lakeview gusher at present, but will be transported in due time, probably as soon as the pumping plants are in and the line is opened to Junction.

An impressive scene was enacted when, on the 12th of the past month, the officials of the Producers and the Union Oil companies gathered at Avila and witnessed the formal opening of the pipe line. The event was one which might well be viewed with pleasure by the participants as it marked the completion of their plans and the beginning of a larger sphere of action for the Independents as well as a vast gain in strength on the part of the Union Oil Company. The oil which was run to the Coast at this celebration came from the Producers' Agencies of Coalinga and Bakersfield and emptied into the Union Oil Company's tank steamer at Avila.

Since the incorporation of the California-Arizona Pipe Line Company has become known, the oil publications of the State as well as those from outside sources have vied with each other in praising and congratulating the Independents and the Union on their alliance in that gigantic undertaking with such a stupendous power as is exerted by the E. L. Doheny

(Continued to Page 7.)

He Boosts Coalinga

R. P. BOYER

A San Franciscan, whose brilliant executive capacity has placed him high among financial men

Mr. R. P. Boyer, one of the most genial oil men ever met with, is one of the stoutest supporters of Coalinga's prestige whom that city can claim. In a recent interview in the Evening Post of San Francisco Mr. Boyer, after declaring that there would soon be a new "crop of millionaires," said in regard to Coalinga:

"I believe that Coalinga is probably the greatest of our oil fields and ranks as perhaps the greatest in the world. At any rate, it is the greatest from the standpoint of production, and the permanency of the field is firmly established.

"It is stated by the United States Geological Survey that there were approximately three billion barrels of oil in the sands underlying the Coalinga field. Since this statement was made, considerable new territory has been proved. It is estimated that at the present rate of drilling it will take over 100 years to drill up the territory already proven.

"At the present production of Coalinga of 1,000,000 barrels a month, it would take 300 years to use all the supply, estimating that it could be all reached by the wells."

Mr. Boyer has rapidly pushed to the front in oil circles through a thorough knowledge of the business, experience and a personality which, while aggressive, is most winning. Boyer's friends are innumerable. Mr. Boyer is vice president and general manager of the Lincoln Mortgage and Loan Company and has held that position for a number of years.

More than 500 new subscribers read the CALIFORNIA DERRICK this month than read it last month. More than 750 will join the ranks of the readers of this magazine during the next thirty days. BE ONE OF THEM.

SAN FRANCISCO CHAMBER OF COMMERCE WILL VISIT COALINGA.

About 125 San Francisco business men will journey to Coalinga on the 15th of this month to get a thorough glimpse of one of the greatest fields on earth.

Coalinga will welcome the visitors almost en masse, and a very enjoyable as well as profitable time is looked ahead to. The occasion is certain to draw a great deal of attention to the oil industry from San Franciscans, who are known to be less interested from a money standpoint, so far, than Los Angeles business men.

Coalinga is waiting with open arms, ready to greet the northern business men and show them how they can make money. Automobiles are in readiness by the score, which will convey the various members on a grand tour of the interesting points in the district. The trip is expected to take but two days, the members of the Chamber leaving on Friday and being at home again on Sunday night following.

THE MAY'S GUSHER.

The great gusher of the May's Oil Company, brought in on March the 4th, is quite as extraordinary as the Lakeview, although when this was being written it had by no means produced as much oil as the latter. Notice of the bringing in of the May's was given in the last issue of the California Derrick, but its flow was greatly under-estimated because of a desire for conservatism. However, the figure given, that of 10,000 barrels daily, was scarcely one-third of the actual flow of the well, which was declared by all competent witnesses to be at least 30,000 barrels a day.

The May's gusher is located on 30, 31-23, in line with other recently obtained gushers, but out farther on the flat, north midway. It is largely owned by F. B. Chapin of Toronto; S. Frank and Peveral Meigs, Jr., of New York; J. D. Lederman, J. M. O'Brien, H. P. Coles, B. A. Hayden, A. G. and Thomas Wilkes of San Francisco, Charles H. Sherman and Superintendent E. W. Bailey. Mr. Chapin of Toronto is said to have secured control of lands adjacent to the May's almost immediately after the well was obtained.

When the well was brought in a Standard Oil man, who was on the scene, is said to have estimated the flow at 60,000 barrels. The roar and rumble of the well was very great, indeed. A lead pipe had been attached to the casing, and when the well started to spout it shot the oil straight out for a distance of 180 feet before it broke into spray. However, preparations for such a force had not been made, and it was no great length of time before it cast aside all restraint, threw the wrecked casing afar and shot oil straight into the air, the crown sheet and other pieces being torn loose and hurled aside.

The hole was 2700 feet deep, so it can be seen what a pressure was behind the oil. Shale bits and large rocks were cast high in the air, so that it became dangerous for persons to approach close to it. Thousands of barrels of oil ran down the arroyos and were lost. Such a flow as this had not been anticipated. It was a blessing to the owners of the company that foreign matter finally wedged in the hole and put a stop to the wonderful performance—a performance which had never before been duplicated in the annals of California's oil industry. The records were all broken in the first six hours' flow of the May's well. Even the famed Hartnell and Silver Tip wells were eclipsed by this new, volcanic gusher, which threw such a stream of oil as made the Standard Oil Company's representatives rush to the scene hot-foot, and caused them to get a contract for the output of the well at 65 cents per barrel.

We quote the written statement of one of the men on the scene in regard to the second eruption of the well:

"The well had sanded up for about a week," said this person, "when the drillers began to clean it out, thinking they had everything secure for taking care of the oil if it should start to flow again. A heavy gate valve had been attached to the top of the casing and a six-inch lead line was attached to the gate. The bailer was run into the hole and scarcely touched the 'bridge,' when, as one fellow expressed it, 'hell broke loose.' It certainly looked like it. The six-inch casing was lifted out of the hole until the horizontal lead line struck the bull wheel shaft and broke it. It was 'all off' then, and thousands of barrels an hour of oil were sent over the top of the derrick, accompanied by tons of rock and sand and with a roar that resembled Niagara. Occasionally a big cave-in of the rocks in the well would check the flow for an instant, but the terrific pressure behind it would force them up and with a terrible explosion a barrel full or more of rocks would be vomited forth and sent hundreds of feet in the air. The constant shower of rocks gradually wore the top of the derrick away and soon the column of oil was unobstructed in its upward flight and went high above the derrick."

At last reports the well had bridged up at a depth of 2200 feet and preparation was being made to secure all the oil which should come up when the flow started again. It was estimated that over $15,000 was lost to the owners through their failure to comprehend the size and force of the well which they had obtained, and their consequent lack of preparation to take the proper precautions. The Standard now has the matter of getting the oil away, and there is no fear but that it will all be saved.

When the flow was at its height the oil was visible for a distance of more than ten miles, and from far off looked like a cloud of dark smoke, heavy on the horizon.

Upon learning of the new gusher, an indescribable scene ensued in oil circles. There was a maddened rush to get out on the field. Excitement was at fever heat. Automobiles, filled to overflowing with oil operators, whizzed at top speed to the scene of the well's operations. The Southern Pacific trains into Midway were jammed with loads of people anxious to view the wonderful well and if possible to purchase lands near the new gusher. What is said to be the greatest rush to any oil field ever recounted was started, and the same has continued ever since, increasing daily. Correspondents of papers came from near and far to get and write up personal impressions. The Mining Review's correspondent estimated the flow to be worth no less than $1625 per hour, or $39,000 per day.

On the whole, Midway certainly has produced a most wonderful series of gushers. It is almost impossible for the persons who do see the gushers to appreciate what lies before them.

THE STANDARD'S OPERATIONS IN MIDWAY.

The Standard has been compelled to double its eight-inch line out of the Midway field in order to care for the oil for which it has contracted from the United Oil Company, 3 wells; the Eagle Creek, 2 wells; the Santa Fe, "2-6"; the Ethel D., 3 wells; the Honolulu, California Midway, the May's and the Hawaiian. The combined output of these wells is very large, indeed, and the Standard's own production is sufficient to exhaust its capacity to care for the transportation of 21,000 barrels daily, without the additional oil which is pouring in on the company from its contracts with the above-named companies. It is said that the May's well is soon to be opened again, in which case there will be an additional 30,000 barrels daily to care for. The Standard has strung the pipe from its main line to the tanks of the California Midway gusher and will probably be conveying their oil from the field by the time this is read.

Standard's No. 2 is keeping up the pace set about a month ago and is said to be producing 10,000 barrels daily. The well is located on 30, 32-24 and was finished at about 2333 feet with 5 1-16-inch casing. The oil is of 24 degrees gravity. The officials are said to look for an increase rather than diminished flow, and there is all likelihood that their anticipation will be realized.

Standard's No. 1 is producing at the rate of 500 barrels per day and is in a very satisfactory condition.

ALL RECORDS BROKEN BY MARCH PRODUCTION.

Advance figures which will not be changed more than a few thousand barrels either way indicate that the production for March makes the output not less than 600,000 barrels ahead of the highest monthly production ever obtained in the history of this State's oil business. The total number of barrels produced for the thirty-one days is estimated at 5,667,000. It is thought that this is an underestimation and that the amount may be materially added to. March is the banner production month of California's oil history. The Coalinga Record says:

"The increase is due to the May's and Lakeview wells at Midway, the Mohawk and the increased production of the American Petroleum Company at Coalinga and the three wells brought in by the Amalgamated on the west end of the Rodeo lease in February, too late to materially affect that month's average. The daily average was just about 185,000 barrels, an increase of 22,000 over February. Data are lacking from several fields, so that a detailed statement is impossible as yet."

ASSOCIATED OIL COMPANY.

The Associated Oil Company has begun an action to dissolve the Pacific Oil and Transportation Company, the National Oil and Transportation Company and the Coalinga Oil and Transportaion Company to merge their assets with the assets of the Associated. The cash assets of the three companies amounts to about one and one-quarter million dollars. They include the Monterey pipe line and boats and other pipe lines. The following figures have been compiled by a stockholder in the Associated Oil Company, showing the net earnings of the big corporation for the year 1909:

Average price in field	50 cents
Less anybody's production cost	13 cents
Net profit to producers	37 cents

Associated Company's production in the field, 7,114,780 barrels; 37 cents per barrel, $2,632,468.60 net income from 415 wells. This is 6.58 per cent. on the company's forty million capitalization.

Oil is sold at tide water at $1 per barrel and better; less amount of purchase price in the field, 50 cents, gives, gross profit to pipe line of 50 cents per barrel; less transportation, administration, taxes, etc., 12 cents per barrel, leaves net profit to pipe lines of 38 cents per barrel.

At 38 cents per barrel, 7,114,780 barrels gives $2,703,618.40 net profit at tide water to pipe line company.

The Associated's net income from wells is $2,632,468.60, and $2,703,616.40 net income from pipe lines, making $5,336,085 total profits for producing and transporting oil to tide water. This is 13.34 per cent. of the company's capitalization.

Total profits	$5,336,085.00
Interest on bonds	139,029.24
Depreciation reserve	717,221.28
Stored, 1909, 3,350,000 barrels	2,010,000.00
Cost 71 wells drilled, 1909	307,438.71
Balance to profit and loss	2,162,395.77

Total sales for 1909, 19,036,715 barrels, less production of 7,114,780 barrels, give 11,921,953 barrels bought and sold for Southern Pacific account, on which there was no profit.

Continued from Page 5.)

interests. There is now no question as to what future lies before these merged interests. A position of the greatest strength has always been conceded to the undertakings of Mr. Doheny, recognized in oil circles in California and outside as one of the most brilliant operators and developers ever interested in the oil business. With such a man at the head of the new company, success is absolutely assured and by the move undoubtedly planned and certainly executed by this genius in oil affairs, the Producers' Transportation Company and the Union Oil Company are placed on a basis which is most enviable. Oil producers figure that from the time of completion of the Producers' and California-Arizona Pipe Line companies, all California producers will get a higher sum for their oil, a market greater than can be supplied will be opened to them and that business can be expected to be placed on such a basis as has rarely, if ever, been obtained before by those interested in the oil industry.

COALINGA MOHAWK'S FINE WELL.

On Friday, March 11th, the Coalinga Mohawk Oil Company brought in a large gusher on 12, 20-15, southeast of the W. K. Oil Company. The well started out by throwing the oil about forty feet above the top of the derrick, and looked like a 3000 or 4000-barrel producer, but it is now rated at approximately 1500 barrels daily. The oil is the best for refining purposes ever secured in the Coalinga field, being fully 32 degrees gravity (Beaume). It is free from sand and of an amber color. When news of the strike had been made known there was a rush to the field, it being told all over that another Silver Tip had come in. The well was brought in at a depth of 3955 feet.

With the Standard taking the production at 65 cents, the owners are assured of a good future for their company. The principal owners are G. H. Umbsen, president; Charles G. Wilcox, vice president; L. M. Hoefler, secretary; Prid S. Turnbull, Pauson Brothers, William Graham, John Spring, Al Meyerstein, Mortimer Fleischhacker and others of Coalinga and San Francisco.

CALIFORNIA OILFIELDS, LTD.

The California Oilfields, Ltd., has brought in a 2000-barrel well of 24 gravity oil on section 27, 19-15, Coalinga. The well is known merely as "56." This brings the Limited's high-grade oil production up to about 15,000 barrels per day, all of which is under contract to the Standard at a price believed to be in the neighborhood of 55 cents per barrel. The Limited's No. 23 is still making about 400 barrels per day, having dwindled to that amount from 4800 barrels daily, the amount which it flowed when brought in over four years ago. This single well has paid the Limited people close on to $800,000, according to the figures given out by a contemporary.

The meeting of the stockholders of the Limited, which had been announced for March 18th, did not take place on that date and probably will not be held before the early part of May. The meeting is held annually after the reports have been made up and there seems to be no fixed time for it. When the reports have been received in England the meeting will be called, and not before. It is still rumored in some regions that the Limited will terminate its contract with the Standard, but there is no means of ascertaining the truth of the report.

MIDWAY WELL FLOWS 100 BARRELS AN HOUR.

Standard' No. 4 on 30, 32, 24, is reported flowing at the rate of 100 barrels an hour.

World's Most Wonderful Oil Well, the Famous Lakeview Gusher, on Sec

"Brought in" early in March this marvelous well has vomited 37,000 barrels of oil daily until all rapid-production records are broken. To da
The derrick is now almost entirely gone, the engine house is buried in sand and the

25, 12-24, Maricopa, Kern County, California—Mirrored in a Lake of Oil

Photo copyrighted by West Coast Art Co., Los Angeles.
California Derrick exclusive agents in San Francisco.

as flowed over a million barrels of oil, filling nine huge sump holes, forming an oil lake and taxing every effort to preserve the production. still flows with undiminished vigor. Further particulars will be found on page 14.

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Oil Trade With France To Be Resumed On Old Basis

After a period of several months, during which the export trade from the United States to France has been absolutely at a standstill, amicable trade relations have been established between that country and the United States, and business may be expected to start in again with a rush. The news is of far-reaching importance, not only to the petroleum interests of this country, but to the importers and consumers of France, especially of high-grade illuminating oils, and it is not unlikely that the fact that her own people had to suffer materially from the tariff war, had much to do in facilitating the negotiations which have ended so satisfactorily. However, be that as it may, there is much cause for gratification on both sides.

Once more the minimum rates of France on petroleum are applied to her imports of the American products. In other words, we are again accorded the same privileges as other producing nations, and, being permitted to trade on the same basis, we can once more claim our proportionate share of the trade.

This is one of the most gratifying pieces of news which has been given out to the oil producer in the Eastern States for a long time, and we can well congratulate ourselves upon the fact that America's exports are so necessary to foreign countries as to make them willing to treat with us even if a generally unfair tariff has caused a suspension of trade relations for a time. The croakings of the Petroleum Review are, apparently, not yet to amount to anything and were a little premature. We have not yet entirely lost that $2,500,000 worth of trade and other nations have not hastened to take advantage of our supposed crippled condition, even though the enlightened editor of our profound British contemporary did predict such very dire conditions would come to pass.

THE OIL BOOM.

Press clippings sent to us from every quarter of the United States, from Canada, from England and Scotland, from France and even from Germany indicate that the California oil boom is world wide and may be expected to continue for a long time, as there is every reason for its existence.

We are in receipt of letters from foreign countries by the score which show the interest taken in the opening of the Midway fields. There is not a day in the week on which we do not receive some inquiry from a distant land about some operating company. The industry has been so healthy and has shown such a marvelous growth that it only required the bringing in of some such wells as have recently called the world to view its opportunities in the Midway field, to notice also the other opportunities in the oil business which have waited in vain for capital to take them up.

It is undoubtedly a "big thing" for California and serves to attract more than passing attention to this State, the richest principality in many products on the face of the earth.

BROTHER ELBERT BUTTS INTO OIL; JOVIAL FRA'S PEN ENLISTED IN AID OF BIG CORPORATION.

That very diverting writer of picturesque and slangy English, Fra Elbertus Hubbard, has dropped with suddenness into the calcium of oil matters by writing an article in defense of a certain very much maligned corporation. Brother Elbert's ideas are expressed in a novel manner, but are somewhat lacking in originality, having been seen in print for the last thirty years or more.

Brother Elbert practically relegates high business ideals to the **limbus fatuorum**, places business on a plane of cut-throat savagery and in a light and air manner recounts a tale of his prowess in compelling a great corporation to give him a railroad pass for the very great courtesy and service of not slinging mud at it.

Those gentlemen whose businesses were wrecked and who now reside in affluence in some county poorhouse will undoubtedly gloat over the vindication of their conqueror on the plane which the genial Fra has set it. It will undeniably be of great satisfaction to them to think that their being conquered was due to the fact that they lacked a few hundred years or so of the savagery of their opponent and so were unable to cope with said opponent. It is too bad that those who died of broken hearts could not have lived to read this beautiful tribute to their morals and business ideals—characterized as old-fashioned.

Except for the facts which he has left out and that the whole essay was trivial and absolutely unnecessary, the Fra has written a very nice assortment of glittering generalities and one which will undouhtedly afford much humor and amusement to oil men. The Fra always has given the world much unintended pleasure.

SOUTHERN PACIFIC IN TIGHT PLACE.

It is now generally thought that the Southern Pacific will lose many thousands of acres of rich oil lands through the action begun by Attorney Edmund Burke, who has enlisted the services of two former United States Secretaries of the Interior to fight his case for him. The case is based upon alleged fraudulent entry by the railroad of mineral lands which it sought to and did secure from the Government as purely agricultural. Millions of dollars are said to be behind Burke, and there is every reason to believe that his case is not the fiasco which the railroad tried to make it out, but that it has a very good chance to succeed.

LAKEVIEW AN EXTRAORDINARY GUSHER.

One of the greatest oil gushers ever seen, Lakeview No. 1, located on fractional 25, 12-24, Maricopa, Midway, was obtained on March 15th by the Union Oil Company. All flowing records except one are broken by this phenomenal well. The May's well No. 1, also a marvel, is less of a producer than the Lakeview, which has flowed steadily since it was brought in at the rate of between 25,000 and 30,000 barrels per day It was rated at first as high as 65,000 barrels and also as low as 30,000, but there is no doubt that it is flowing 35,000 barrels of oil per day at present. The oil is 21 degrees gravity. When this article was being written the Lakeview had already produced over $250,000 worth of oil. State Mineralogist L. E. Aubury places the flow at the present time at 37,500 barrels per day.

The Lakeview Oil Company consists largely of Los Angeles capitalists, although the Union Oil Company owns 51 per cent. of the stock, received as its share for drilling the well. The Lakeview was incorporated by Julius Fried, Charles G. Off, F. E. Dunlap and R. D. Wade, and the well was started last January. The operators met with difficulties which made an

arrangement with the Union Oil Company desirable, Union securing for its services 51 per cent. of the stock of the company.

It can be imagined to what prices land has soared in the region of this well. Fortunes have been offered for leases in the vicinity. Excitement is intense. There is no doubt in the mind of anybody in oil circles that Midway is one of the biggest oil fields in the world.

The total production of this wonderful well for the first twenty-one days of its existence is in the neighborhood of 900,000 barrels. The well was still producing at a marvelous rate when the Derrick went to press. Its derrick is now entirely demolished, the engine house is nearly buried in the sand and the whole region around is soaked in oil. The Producers' pipe line is reported pushing 10,000 barrels daily at the present time to the tanks at Midway. From Midway it will be pumped to Junction as soon as possible and thence to the Coast.

Scene in Templor District—15,000 barrels of oil in storage in the sumps of the Templor Ranch Oil Co., awaiting connection with the Producers Transportation Co's pipe line

LADY WASHINGTON OIL COMPANY.

The Lady Washington has set its cement and drilling with the rotary will be continued as rapidly as possible. Work is being stimulated by the knowledge that oil in quantities is now an absolute certainty, the Johnson Oil Company's well No. 2, in the northwest quarter of the northeast quarter of section 18, 11-23, which came in producing in the neighborhood of 5000 barrels a day, having conclusively proved the very high value of productiveness of surrounding territory. Gushers now surround the Lady Washington on all sides and the tremendous gas pressure experienced so far indicates what may be expected from it. Maricopa is now the first oil-producing section of the greatest oil State in the world, owing to the Lakeview and the other gushers situated there, and great expectations are centered in the Lady Washington well.

TEMPLOR RANCH OIL COMPANY.

Arrangements have just been completed for the construction of a six-inch lateral from the Independent Producers' main oil line to the delivery tanks of the Templor Ranch Oil Company, and necessary contracts pertaining to same have already been executed, and as soon as the formality of right-of-way is provided for building of the pipe line will begin. The construction of the line will probably take thirty days and will be built entirely by the Producers' Transportation Company.

In anticipation of the early completion of the line the Templor Ranch Oil Company is installing two additional air compressors of the Rix type, putting in additional tanks, a large 750-pound pressure line pump, and increasing its boiler capacity. This company and its associated companies have now completed fourteen wells, none of which have ever been pumped to their capacity for any length of time, on account of the lack of storage and transportation, but working tests have been made for a sufficient length of time on each of them to justify an estimation of from forty to seventy-five barrels each for the entire group as soon as they are put into active commission.—Bakersfield Oil Journal.

SENSATIONAL GUSHERS REPORTED IN NORTH MIDWAY.

An unverified report has just reached this office through our North Midway correspondent that the Santa Fe has an enormous gusher; one which it is claimed will equal the Lakeview or any other so far brought in in the State, on section 25, 31-22. The well is said to have been brought under control early and to have been flowing at the time it was conquered at the rate of 30,000 barrels per day or greatly over. President E. P. Ripley of the Santa Fe is made authority for the statement that the well is fully as large as the Lakeview and that it is flowing 35,000 barrels daily. The production has been shut off and a 6-inch pipe line is being laid from Fellows to connect with the company's tanks at that station. News of this well has been kept very quiet and comes as a complete surprise, as no other publication has yet published anything of this producer which would indicate that it is in the Lakeview class. The Santa Fe is believed to have allowed very little news of the well get out. The oil is said to be excellent fuel oil.

On top of the report of the Santa Fe's strike comes the sensational claim from Fellows that the Pioneer Midway Oil Company has another and even better gusher than the Santa

Fe; that in tbe sbort space of four hours this well actually flowed 30,000 barrels of oil. Tbis well is located on section 30, 31-23. It is said to have sanded up after its first remarkable performance, but it can be easily started witb a little agitation, but the reports seem exaggerated very greatly at present.

Down on the southwest quarter of section 4, 32-23 the La Belle is said to have another gusher fully as large as any other brougbt in in recent times. If this is tbe case, Nortb Midway is the most wonderful part of tbe most wonderful field on earth today. Such phenomenal productions as are claimed for these wells seem unbelieveable; but so were tbe Lakeview's and the May's. It is possible that the reports are entirely true.

RECENT LAND SALES IN MIDWAY.

The south half of the south half of section 32, 31-23, consisting of 160 acres, has been sold by the Eight Oil Company to the Alaska Pioneer Oil Company for $260,000. Members of the Eight Oil Company are: H. I. Tupman, S. P. Wible, Charles Haberkern, T. E. Klipstein, E. T. Dumble, W. E. Richards, C. W. McCutcheon and the heirs of the late Prof. J. Owen. The purchasers of this property are: William Chappell, Seattle; Daniel McGillivray, San Francisco; H. H. Hart, Coalinga; Josepb F. Burke, Dawson; C. J. Berry, Selma. All the purchasers are said to be old-time Alaskans, who made their money during the first gold rush to the North. The lease which they have purchased lies in the very heart of the gusher district, being but three-quarters of a mile from the Santa Fe and a quarter of a mile from the California Midway.

Lot No. 1, on section 6, 21-22 has been purchased by the Consolidated Midway Company, which will operate immediately under the management of J. M. Danziger.

The east half of the southeast quarter of section 25, 32-23 has been reported purchased by Los Angeles capitalists from Emit Graham for a consideration of $60,000 or $2000 per acre.

L. C. Torrance and associates are reported to have purchased the north half of the northwest quarter of section 14, 31-22 from the Bear Creek Oil Company, which held an option on the land at $1250 per acre. Mr. Torrance is a director in the United Oil Company.

The Buena Vista Land and Development Company has conveyed to the Honolulu Oil Company the north half of the southeast quarter of section 10, 32-24, consisting of 80 acres, in compliance with agreement to do so upon the completion of the first well on the property by the Honolulu company. The Buena Vista Land and Development Company has also agreed to sell the remainder 560 acres in section 10 and the southwest quarter of section 2 for $360,000, of which amount $120,000 has already been paid.

Very creditable reports state that T. A. O'Donnell has purchased for the American Oil Fields Company some 760 acres of land belonging to the Monte Cristo Oil Company for a price over $1,000,000. The land comprises all the holdings of the Monte Cristo on sections 31 and 32, 32-24 excepting the northwest quarter, which was retained by the company and later reported sold to Messrs. Holbrook and McGuire for a consideration of $240,000. The land is situated directly between the Standard's big gusher on section 30 and the Lakeview, Wellman, K. T. & O. and other gushers, placing it in the center of the gusher district. The deal is said to have been confirmed by Mr. Henry Ach, manager of tbe Monte Cristo.

The south half of the southwest quarter of section 24, 31-23, North Midway, has been purchased by the San Francisco-Midway Oil Company from S. A. Johnson, price not made public.

The Carnegie Oil Fields, Limited, is reported to have taken over the northeast quarter of section 9, 31-22, McKittrick, wbich formerly was operated by F. J. Burns and W. O. Maxwell. The new company is composed of Andrew Carnegie and Santa Barbara people.

Two hundred acres on the north half of section 32, 31-23, north of the California Midway and east of the May's, was rumored sold at $2000 per acre by Messrs. McMurty and Hoeppner.

SUNSET-MIDWAY-McKITTRICK BREVITIES.

The Honolulu and Hawaiian companies, witb all the lands they control in the Midway fields, are rumored to be undergoing a process of merging into the Lakeview Oil Company; capitalization, 200,000 shares.

The Fortuna Oil Company, incorporated with a capital of 500,000 shares by Robert Troescher of New York and F. J. Carmen of Los Angeles, will operate on 15-31-22 in the North extension of Midway.

A number of oil men whose holdings in Midway have been greatly in dispute have joined in forming an arbitration board and will abide by the decisions of the board wbich tbey have created for the settlement of all disputes in regard to title, etc. From now on there will probably be neither shootings nor gun-men stories in the yellow oil papers.

The K. T. & O. Co.'s wells No. 28 and No. 29 are delivering 2000 barrels daily into one sump througb one pipe. No. 28 is tbeir big gusher. It has now come down to a normal producing rate.

The Santa Fe "2-6" is still producing 650 barrels daily. The contract entered into with the Standard Oil Company for 200,000 barrels is said to be about filled, and in case this is true, the production of the well will soon go to the agency. More wells are being drilled on "6," section 6-32-23.

The Cooley well of the Eagle Creek, section 31-31-23, is reported to have made 1800 barrels recently in twelve hours.

The California Midway Oil Company is constructing a concrete reservoir which will hold 10,000 barrels of oil when finished. Provision in the form of sumps is also being made for 25,000 barrels additional production. The Standard will care for tbeir production when their gusher is again flowing.

The Associated Oil Company is reported to have secured a royalty lease from Messrs. Beers, Wilson, Dover, Painter and Kirkpatrick on section 22, and section 26, 30-23.

The January Oil Company, owning good leases in Midway and drilling on the northwest quarter of the soutbwest quarter of section 26, 32-23 (Mt. Diablo), adjoining the June lease, will be listed on the New York curb.

The June Oil Company's capital stock has been entirely bought out by F. B. Chapin (president of tbe May's Oil Company), W. A. McCaffery and R. K. Russell, capitalists of Toronto, Canada, according to a well-founded report. The June corners on the May's gusher territory.

The United Oil Company has a good well in its No. 2 on the "Midway-6" lease. The well is said to be a big one.

The Pyramid Oil Company has secured a lease from the United Oil Company on the north half of the northeast quarter of the southeast quarter of section 26, 31-22, and will develop it.

H. F. Boyer of the McKittrick operators has secured a lease known as the Leonard-Merrill lease on section 11-30-21, McKittrick, on a one-sixth royalty basis.

Paul E. Ferguson of San Francisco has purchased a lease of fifty acres in the nortbwest half of section 6, 11-23, adjoining the La Blanc on tbe north and the K. T. & O. on the east, from M. P. Waite of Maricopa.

Bookkeeper and Stenographer with exceptional experience in oil and mining accounts, a first class man, desires permanent position. At present with an oil company near Bakersfield. Address, R. H. N., California Derrick, Pacific Bldg., San Francisco.

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

The Nevada Petroleum Company's well No. 1, on section 30, is doing better than 300 barrels daily.

The Spinks Crude Oil Company will drill twenty more wells this year.

The Carter and Metcalf properties on the north line of section 8, 20-15, consisting of 80 acres, was sold recently to W. S. Boggs and John Keith and their associates, of the Imperial Oil Company. Purchase price is said to be $2500 per acre.

Spinks No. 4 is now making 100 barrels per day on the beam.

The Creme Oil Company has been organized to operate in the Coalinga field. It is backed by the developers of the old Kern Oil Company of Kern River, which was later sold to the Yellowstone Oil Company.

Silver Tip No. 2 is down more than 2000 feet and has cemented off the water, according to our correspondent. They expect a large well.

The Traders' Oil Company will drill twenty-three new wells.

The Coalinga Security Company has just brought in its well No. 2.

The S. W. & B. Company has in its new No. 6 a 300-barrel producer. No. 5 is said by the Coalinga Record to be producing about 200 barrels daily.

The London Petroleum Company will pay its regular quarterly dividend in April.

The Netherlands and San Juan Oil companies have been purchased by parties who are heavily interested in the Homestake and Coalinga Unity companies. This is said to be one of the biggest purchases of the last few weeks.

The Record and Caribou companies, both operating on section 22, have contracted their entire products in the Coalinga fields to the Standard Oil Company.

The Coalinga-Monterey Oil Company has been formed and will operate sixty acres on section 4, 20-15, land formerly owned by the Claremont Oil Company.

The W. K. Oil Company, next to the Coalinga Mohawk, has a fine well in its No. 5, which is flowing more than 2000 barrels daily of 24 gravity oil. Both the Mohawk and the W. K. have contracted their entire output to the Standard Oil Company at 65 cents per barrel.

Messrs. Eugene De Sabla, E. B. Kimball and W. P. Hammon, all of San Francisco, have purchased the Esperanza Oil and Gas Company and will continue both to operate and develop the same. J. F. Davis, former president of the company, has resigned and Mr. Kimball was elected to succeed him. The Esperanza has twelve good producers at present, although No. 2 is said to be a little under the weather. Much interest has been awakened in the company in San Francisco business circles owing to Mr. De Sabla's being connected with it.

Thirty-nine oil companies were incorporated in the last two weeks of March with a capital aggregating $21,000,000. Most of the newly organized companies will operate in Coalinga.

The southwest forty acres of section 8, 20-15 has been purchased by the Coalinga Security Oil Company for a price reported at $2500 per acre or a total sum of $100,000 involved.

EXCELLENCE OF COALINGA PAPER.

The management of the California Derrick wishes to compliment the Coalinga Record on the cleanliness, the accuracy, authenticity and general excellence of its make-up. Were some detractors of the Record one-half as fair as that paper is, there would be a marvelously developed veracity in their quarters and one which said papers would not easily get used to.

PYRAMID OIL COMPANY.

The Pyramid is reported upon excellent authority to have a 200-barrel well of 30 gravity oil in its No. 1 on the Santa Paula property. The well was perforated recently, but was not yet on the beam. There is said to be no water in the oil, which is pure and very clean. The head driller says that a conservative estimate of the well's present producing capacity would place the figure at not less than 200 barrels per day. Work is being pushed by the company on the North Midway lease on section 26, 31-22. Material has arrived on the scene and development will be hurried. Four large loads of lumber have been delivered on sections 18, 20 and 30, T. 32, R. 25., where the company owns 1600 acres. The land is proved oil-bearing and is considered very good.

SANTA MARIA.

Mrs. Mary E. Post of Santa Barbara has just received the first of four payments of $30,000 each for her 400 acres of land in the Santa Maria oil field, a mile north of the Palmer Oil Company's tract, which has been purchased by the Palmer Annex Oil Company, according to the Mining Review. The price was $300 per acre or $120,000 for the tract.

The California Coast has a good well in its No. 9.

Western Union No. 38 has been put on the beam and shows up very well.

The Rice Ranch Oil Company will deepen their wells to increase production.

The Palmer Annex will locate two wells about 1000 feet from Palmer No. 4.

The Los Alamos Company's well is on the pump and is making oil of a lighter grade than the Palmer. Some people are inclined to think that this will be greater than the gerat Palmer gusher, although that belief is scarcely justified as yet.

Mr. Frank L. Brown, president of the Palmer Oil Company, entertained twenty-eight members of the Los Angeles Stock Exchange during the latter part of March. The entire Santa Maria field was "taken in" by the visitors who were very much surprised at its extent and wonderful possibilities. A delegation of San Franciscans met the Los Angelens at Santa Maria and the whole party were whirled for fifty miles through the fields in automobiles. A splendid dinner was given the visitors at the Palmer properties, and they were taken to the station afterwards in plenty of time to catch their train. The members of the party from Los Angeles are as follows: L. M. Blankenhorn, A. H. Conger, H. B. Brooks, L. A. Crisler, S. H. Ellis, F. Irwin Herron, J. P. Kane, C. B. Miner, J. B. Neville, E. H. Newland, J. Fred Gale, D. C. Sullivan, L. L. Sheldon, Albert Searl, H. J. Schaper, A. C. Wagy, H. S. Woolner, L. F. Parsons, E. P. Dunn, F. B. Scotten, E. M. Brittain, R. N. Bulla, B. F. Taylor and W. W. Orcutt. The San Francisco delegation consisted of C. E. Arrowsmith, L. H. Van Wyck, H. Adams, Thomas Robinson, F. H. Spring, J. J. McKenzie, George Sneider, James Degan, W. M. Hines, Wease Little, S. D. Laudeker, W. F. Mann, E. Sichel, Louis Hagan, W. M. Elliott, Boyd L. Wilson, J. H. Berghauser, F. D. Atherton, Frank Corde, H. H. Shinn, Joseph C. Toplitz, F. Houseworth, John Lloyd, Sim Mack, W. Stauf, S. Wollberg, M. Robbins, I. Harris, George Watson, Fred Hadley, Jr., L. Kullman, G. A. W. Hinckle, Mel Toplitz, Fred Rodda, Ed. Choynski, T. V. Doub, N. Cook, John Tehan, G. W. Black, S. E. Hendon, William Hinckle, J. Pauson, John Hinckle, W. H. Ingles, A. F. Coffin, H. S. Samuels, William Bannon, W. H. Moise, H. P. Landon, E. Eppstein, H. K. Shaw, S. M. Wood, W. H. Slayton, F. W. Bishop, D. Routh, C. E. Budson, R. P. Bover, R. H. Huston, Grant Fox, James Gartland, W. H. Thompson, Ben Boas, W. G. McAdams, P. A. Shinsheimer, P. P. Hand, F. B. Walker, R. M. Van Doran, J. Paul Cosgrove, Frank L. Brown, Victor Ensinger, J. C. Kemp, G. W. Ebner, E. Green J. Collett, Donzel Stoney, W. R. Berry, G. R. Webster.

PREMIER OIL COMPANY.

The Premier is drilling three new wells, having received all necessary supplies to go ahead. As soon as one well is finished another will be started in continuance of the policy

recently inaugurated of drilling up the lease to a very large production, by keeping three strings of tools going all the time. The March production was in the neighborhood of 65,000 barrels. The Premier's stock is now selling at over $1.50 and the excellent condition of the company makes it highly desirable.

GENERAL FIELD BREVITIES.

The Section Six Oil Company will pay its regular 1 per cent. quarterly dividends in May.

The Manchuria Oil Company, leasing from the Amber on section 26, 31-22, North Midway, about a mile from the remarkable new Santa Fe well on section 25, has secured enough backing to float it and will drill immediately with every prospect of success. San Francisco capital is backing the company and reliable persons are in control.

The One-Eleven Oil Company, with property close to the K. T. & O., the Lady Washington and Johnson Oil companies, is developing as rapidly as possible. The Sutcliffe Investment Company of San Francisco is behind the One-Eleven.

The State Oil Company of California has recently been organized to take over and develop 2160 acres of land on the west front of the Kern field. It is said that the new concern will run ten strings of tools continuously.

Madison Oil Company is said by the Oil Book (the organ of the Lincoln Mortgage and Loan Company of San Francisco) to be drilling on a property in Kern River recently secured for them by their management. The property is considered an excellent one.

The Standard Oil Company is reported to have purchased 40,000 acres of supposed oil lands in Fish Lake Valley, Cal., fifty miles west of Goldfield, Nev It is said that the lands secured will be developed in the near future.

The Vallecitos Oilfields in San Benito County have recently been visited by four geologists who have declared with unanimity that the fields had a very fine showing. Five companies are awaiting the opening of the Silver Creek road as a highway in order to get supplies wherewith to develop their holdings at Vallecito.

The Jewell Oil Company has a good well in its No. 8 which came in on the 28th ultimo. Work on Nos. 9 and 10 is reported to have been started.

The State mineralogist has had a series of descriptions of the oilfields written by Mr. Paul Prutzman, the well-known chemist and oil man of the Department, two of which, those of Coalinga and Midway, are now obtainable. They are of a very interesting and conservative nature and may be had on application to the Department.

MASCOT OIL COMPANY.

The Mascot is drilling its twenty-fifth well at the present writing. Their well is to be drilled until it reaches the gusher sand. Mascot stock is going up and the company has recently had a number of very good offers for its properties which were unacceptable. The bringing in of so many gushers in the near vicinity has added very greatly to the value of their property, really in the "heart of the gusher district."

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, patent attorney, Park building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Well-drilling machine, G. D. Loomis, Tiffin, Ohio, 948,425.

Method of cleaning oil wells, F. A. Fianegin, Chautauqua, N. Y., 949,567.

Deep-well pump, F. W. Krogh, San Francisco, Cal., 949,681.

Mechanism for delivering a plurality of torpedoes simultaneously in a well, R. S. Pringle, Bradford, Pa., assignor to the E. I. du Pont de Nemours Powder Co., Wilmington, Del., 949,778.

Cable-clamp, C. A. Butler, Bartlesville, Okla., 950,275.

Tubing and casing hook, L. C. Sands, Pittsburg, 950,641.

TRADERS MAKE FINE SHOWING.

The financial statement for 1909, issued to stockholders by the Traders Oil Company, operating in Coalinga, Kern river and Midway fields, shows a gross earning of $272,527.77, a nel $172,567.05, of which latter the stockholders received in dividends $137,136.50. Of the gross $9,708.12 was received from oil produced in the Kern river field and $258,786.07 from the Coalinga field. Among its assets are oil lands at Coalinga, Kern and Midway, valued at $937,667.50 and buildings, plant, equipment and so forth at Coalinga, $214,249.61.—Oil News and Digest.

RECENT INCORPORATIONS.

Devil's Den Associated Oil Company—Capitalization, $1,000,000. Officers: A. G. Mintner, president; W. H. Harp, vice president; L. D. Clark, secretary.

Forest City National Oil Company, Los Angeles—Capitalization, $2 0,000. I. N. Richards, E. W. Reynolds, A. B. Ebner, L. M. Hamilton, Frank R. Surhee, J. F. Church, F. J. Hickey.

Golden Gate Oil Company—Capitallzation, $1,000,000. Directors: L. A. Crandall, W. F. Buck, J. A. Buck H. B. Gregg, M. J. Linsay.

Hattie Oil and Gas Company, Bartlesville, Okla.—Capital, $10,000. G. T. Parr, E. T. Rice, B. F. Parr.

Boston-Pacific Oil Company, San Francisco—Capitalization, $1,000,000. Directors: John Fillins, Oakland; Fred G. King, C. W. Gugg, Charles T. King, A. B. Dodd, Fred Grotefund and E. D. King, San Francisco.

Nineteen Ten Oil Company—Capitalization, $1,000,000. Directors: H. R. Boynton, I. B. Newton, F. J. Stillson, J. V. Vickers, C. H. Crawford, E. D. Lyman, R H. Jay.

The Enterprise Oil Company—Capital stock, $666,666. J. M. Day, C. A. McCoy, Sherman Reynolds.

The Boston Petroleum Company—Capital stock, $500,000. Directors: W. N. Akers, W. J. Maloney, M. C. Taylor, all of Wilmington, Del.

The Twenty-three Water Company—Capital stock, $10,000. Directors: A. B. Canfield, J. B. Wrenn, T. M. Young, B. L. Smith, A. L. Cheney.

Croesus Oil Lands Company—$1,000,000. Incorporators: P. N. Snyder, Dr. J. Hare, L. D. Alexakis, K. Stivenson, M. Sikes, H. M. Hnunze, A. C. Lahrie.

El-Oso Asphalt Company—$300,000. Directors: Fred C. Blake, Francis H. Blake, Frank O. Blake, Jr., H. M. Kingsley, J. B. Meyrs, W. S. Henry.

Mahaska Oil Company—10,000. Directors: W. C. Sheppard, Jr., M. Ada Sheppard, Joe Beeson, Eva S. Beeson, A. P. Spensor.

Kernel Consolidated Oil Company—$800,000. Directors: P. E. Towne, F. H. Meyers, H. A. Rispin, J. Berendsen, H. F. Peart, all of San Francisco.

Midway Kingpin Oil Company—$1,000,000. Directors: Frank B. Sturge, W. H. Neiswender, Harvey Crane, Harry C. Collins, Darrell Condley.

Edith L. Oil Company, Fresno—$75,000. Subscribed.

Los Angeles McKillicut Oil Company—$1,000,000. Incorporators: John V. Hoffman, George G. King, Lew W. Butler and H. J. Brainard.

Panoche Water and Oil Company—Incorporators, residents of Hollister and Salinas.

Elk Hills Oil Company—Organized and operated by the Balfour Guthrie Company.

Midway Union—$5,000,000. Will control over 17,000 acres of lands and will be operated by a syndicate.

The Pacific States Guarantee and Land Company, taking over the entire interests of the Burr Bros., New York City, has been organized by C. H. Tobey, A. J. Belcher and C. M. Tobey, with offices in San Francisco.

Coalinga-Midway Oil Company, merged from the Lone Oak, Lane Pine and Alvarez Oil companies, operating in Coalinga and Midway. Directors: E. A. Nickerson and J. L. Chadwick of Berkeley; Luther Rodgers, Harry Winham, S. Hauser, Wm. Vanderhurst of Salinas and W. S. Herring of Coalinga.

Industrial Oil Company—$10,000,000. Incorporators: C. V. Hall, W. J. Borst, P. L. Shideler and E. H. Dalton.

Midway-Premier—$500,000, Oakland and Los Angeles capital. Incorporators: Harry W. Thomas, W. B. Beasley, A. C. Tupman of Los Angeles; T. M. Young of Bakersfield, and Frank N. Smith of Oakland. The officers are B. G. Adams of Los Angeles, president; Frank N. Smith, vice president; Harry W. Thomas, secretary; John M. McLeod and Fred V. Gordon of Los Angeles, directors :the Kern Valley Bank of Bakersfield, treasurer. The company has acquired 40 acres In the southwest of 5-32-23.

Consolidated Oil Company, San Francisco—$1,000,000.

Castle Oil Company, San Francisco—$600,000.

Big Ten Oil Company—$300,000.

(Continued on Page 16.)

MONTHLY STATEMENT OF DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES TO MARCH 31, 1910.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Jan. 15, '10	.03	11,400	$ 150,000
Amalgamated	Mar. 15, '10	1.00	50,000	1,450,000
American Pet	Mar. 1, '10	1.00	126,735	1,056,695.50
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated	Mar. 1, '07	1.50	446,055	1,548,368.55
Bay City	Feb. 10, '10	.20	20,000	90,000
Brookshire	Jan. 1, '10	.01	5,000	442,500
Caribou	Mar. 15, '10	.25	20,175.75	700,531.74
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Claremont	Mar. 28, '10	.02	10,000	325,000
Coalinga Pac	Dec. 23, '09	.10	6,500	107,250
Columbia	Mar. 25, '10	½&½	9,992.62	274,796.87
Del Rey	May 15, '09	½c	3,927.50	11,782.50
Esperanza	Dec. 27, '09	.02	3,200	49,450
Euclid	Mar 1, '10	.01	3,500	124,000
Four	Feb. 25, '10	.01	3,000	213,000
Globe	Jan. 1, '10	.01	6,000	81,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	Mar. 20, '10	.02	2,000	477,000
Homestake	Feb. 10, '10	.10	1,000	77,250
Illinois Crude	Mar. 1, '10	.01	2,000	88,000
Imperial	Jan. 6, '10	.60	60,000	1,940,000
Junction	June 1, '09	.01	2,500	20,000
Kern Oil	Nov. 19, '09	.22	22,000	42,000
Kern River	Mar. 2, '10	.10	2,000	100,000
Linda Vista	Mar. 5, '10	.01	3,838.50	72,931.50
Lucile	Dec. 20, '09	.10	2,670.44	42,727.04
Mascot	Feb. 20, '10	.01	5,000	5,000
Mexican Pet	Mar. 1, '10	.01 1-3	85,616.70	3,477,243.54
Mecca	July 15, '09	.03	12,675	71,825
Monte Cristo	Mar. 31, '10	.10	50,000	390,000
Nevada Co.	Oct. 13, '08	.04	10,000	40,000
Palmer	Mar. 20, '10	.01	18,020.05	250,360.90
Paraffine	Mar. 15, '10	.01	3,000	15,000
Peerless	Sept. 20, '09	.06	6,000	801,000
Piedmont	Aug. 16, '09	.01	3,890	22,987.30
Pinal	Mar. 3, '10	.10	14,992	887,101.50
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Record	Mar. 16, '10	.07½	7,500	55,000
Reed Crude	Dec. 28, '09	.12	12,000	1,124,000
Rice Ranch	Mar. 10, '10	.01	3,000	99,000
Royalty	Mar. 28, '10	.33 1-3	6,666.66 2-3	15,466.66 2-3
S. F. & McK	Mar. 1, '10	.30	15,000	340,000
Sauer Dough	Mar. 21, '10	.02½	4,987.50	517,303.50
Section 25	Mar. 1, '10	.25	10,000	10,000
Sesnon	Jan. 26, '10	.15	15,000	90,000
Silver T O Co.	Feb. 25, '10	.10	7,500	30,000
Sovereign	Jan. 10, '10	.01	5,000	90,000
Sterling	Mar. 15, '10	.12½	31,250	778,250
Superior	Feb. 12, '10	.01	5,000	57,500
S. W. & B.	Sept. 10, '09	.01	3,770	41,470
Thirty-Three	Sept. 3, '09	.30	30,000	670,000
Traders	Mar. 15, '10	1.10	14,000	179,186.50
Union	Mar. 20, '10	.50	124,813	6,368,255.15
United Pet	Mar. 20, '10	.50	40,375.50	2,178,959.93
Wabash	Mar. 16, '10	.01	3,000	120,000
West Coast pfd.	Mar. 21, '10	2.00	20,816	83,264
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000

Total dividends paid to date $29,242,803.68 2-3

Total dividends paid by the above companies for March, 1910 ..... 683,679.28 2-3

LOS ANGELES QUOTATIONS.

Company.	Bid.	Asked.
Amalgamated Oil	55.00	62.50
American Crude Oil Co.	.....	.80
American Petroleum Co. (com.)	74.00	75.25
Associated Oil	50.00	50.37½
Brookshire Oil	1.97½	.....
California Midway Oil Co.	.72½	.....
Central	2.02	.....
Cleveland Oil Co.	.48	.50
Columbia	1.17	1.28
Continental Oil	.38	.....
Enos Oil Co.	1.40	.....
Euclid Oil Co.	.50	.75
Fullerton Oil	.....	4.00
Globe	.....	.17
Jade Oil Co.	.45½	.46
Mexican Petroleum	1.06	.....
Mexican Petroleum Ltd. pfd.)	67.25	.....
Mexican Petroleum Ltd. (com.)	29.50	.....
New Pennsylvania Petroleum Co.	.99	.....
Olinda Land Co. (Oil)	.50	.52½
Palmer Oil Co.	1.31	.....
Pinal Oil Co.	.....	13.00
Piru Oil and Land Co.	.17	.....
Reed Crude	.37½	.....
Rice Ranch Oil Co.	.95	1.10
Section Six Oil Co.	.53	.54
Trader's Oil Co.	125.00	127.00
Union	105.00	.....
Union Provident Co.	102.75	104.00
United Petroleum	104.50	106.00
West Coast Oil (com.)	9.00	.....
Western Union	25.00	180.00

NON-PRODUCERS.

Billiken Oil Co.	.....	.....
Coalinga Crude Oil Co.	.32½	.....
Elk Consolidated Oil Co.	.....	.....
McKittrick Inv. Oil Co.	.15	.19
McKittrick Oper. Oil Co.	.17½	.22
Nevada-Midway Oil Co.	.30	.....
Oleum Development Co.	.12	.12⅛
Provident Midway Oil Co.	.....	.....

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

Company.	Bid.	Asked.
Apollo	.14	.18
Associated Oil Stock	50.00	50.62½
Bay City	2.35	.....
Blue Moon	.31	.....
Brookshire	2.10	2.20
California Midway	.72	.....
Caribou	17.12½	.....
Chicago Crude	.11	.....
Claremont	.....	1.97½
Cresceus	.74	.....
Dabney	.....	.10
Del Rey	.12	.18
De Luxe	.....	1.75
Enos	1.37½	.....
Four	.....	.25
Fulton	1.12½	.....
Gypsy	.....	.45
Illinois Crude	.51	.....
Imperial	.....	30.00
Junction	.40	.....
Mascot	.....	2.50
Mecca	.....	1.27½
McKittrick	.20	.....
Midway of Ore.	.....	.15
Monte Cristo	3.00	.....
Nevada County	.30	.....
Nevada Midway	.30	.....
New Penn. Petroleum	1.02½	1.05
Pacific States Petroleum	.78	.83
Paraffine	.....	1.40
Palmer	1.25	1.27½
Peerless	.....	5.00
Piedmont	.....	.18
Pinal	10.00	11.00
Premier	.....	1.50
Record	6.25	.....
Republic	.67	.68
S. F. and McKittrick	27.50	30.75
Sauer Dough	2.27½	2.50
Section 25	.....	26.00
Sesnon	8.00	.....
Shawmut	.40	.50
Silver Tip	2.80	3.00
Sovereign	.....	.24
S. W. and B.	.70	.75
Sterling	2.95	3.00
Sunset Monarch	.65	.....
Turner	1.55	1.60
Wolverine	.30	.....
W. K. Oil Co.	3.00	3.50

(Continued from Page 14.)

Eagle Oil Company—Salinas and Hollister capitalists. Will operate in Lone Oak district on Lewis Creek.

The Bernice Oil Company—$50,000. Directors: L. S. Chittenden, James Mills, R. E. Sworden.

Beaver Oil Company—$2,000, of which $600,000 is paid in. To develop San Diego County oilfields. Incorporated mostly by British Columbia capitalists.

Lompoc-Florence, of Tucson, A. T.—$1,000,000. Incorporators: J. A. Craig, R. H. Broughton, R. P. Craig, W. F. Craig and W. Ona Mortan.

Huasna Oil Company—$1,000,000. Directors: George McGillvray, Charles W. Reed, B. C. Van Emmon, John H. Hanson, of San Francisco, and F. H. Hood of Oakland.

Midway Union Oil Company—$1,000,000. Incorporators: R. O. Young, M. V. Carpenter, J. Ball, E. I. and D. Cobb.

Oklahoma Oil Company—$100,000. Directors: E. P. and C. J. Blake, E. A. Featherstone, A. C. Robbins and J. A. Foster.

East Midway Oil Company, Oakland—$100,000. Directors: C. A. Barlow and W. H. Hill, Bakersfield; James Ogden, H. C. Montgomery and J. J. Scrivner, Oakland.

Canadian-California Oil Company—$100,000. Directors: H. H. Blood, G. A. Garland and F. T. O'Flanegan, all of San Francisco.

Los Angeles, McKittrick Oil Company—$1,000,000. Incorporators: J. V. Hoffman, L. W. Butler, G. G. King, G. B. King and H. G. Brainerd.

M. & T. Oil Company—$300,000. Directors: E. N. Moore, S. S. Hawley, M. J. Laymance, L. H. Rice of Oakland and S. G. Tyron.

K. H. Oil Company, Fresno—$200,000. Directors: J. W. Bourdette, D. F. Baxter, L. S. Chittenden, F. A. Curtin and H. E. Barbour.

San Francisco-Midway—$500,000. Directors: H. S. Oliver, F. A. Dwyer, G. H. S. Harding, H. R. Grantley, E. B. McClanahan, S. H. Derby and E. L. Hoag, all of Los Angeles.

Twenty-two Oil Company—$10,000. Directors: A. R. Kanaga, M. W. Kanaga, A. LeDoux, T. McCaleb, O. Gagnon.

Industrial Oil Company—$10,000,000. Subscribed, $5. Directors: C. V. Hall, W. J. Borst, E. H. Dalton, J. Sharp, P. L. Shideler.

Twenty-three Oil Company—Capitalization, $500,000. Directors: L. P. Timmons, A. L. Smith, C. W. Hobson, P. C. Taylor and A. R. Stainwand, Fresno. Chinese are largely among the stockholders of this company.

Coalinga Eight—$600,000. President, John Keith; vice president, W. S. Boggs; secretary, B. A. Hayden; treasurer, Bank of Bakersfield; directors, F. Mannell and L. Olcese.

Dominion Oil Company of San Francisco—$250,000. Directors: J. E. McCormick, N. M. Crossett and A. J. Rankin, San Francisco; A. F. Gimball, Oakland; T. R. Finlay, Santa Maria.

There are several new companies not mentioned here on account of lack of space. These will be mentioned in our next issue.

Subscribe for California Derrick. $2.00 per Year.

NEW OIL FIELDS

Operators, promotors—get into the San Juan, Utah, field with its paraffine base, 42 gravity oil, while it is being developed. Will sell any portion large tract along river; exposed oil sands—big seepage—this spells OPPORTUNITY.

CHARLES H. FLEMING, Everett, Wash.

Have you an oil property to sell? Do you want to buy an oil property? Have you some oil stock to sell? Do you want to buy any good oil stock? Do you desire some information about oil properties or oil stocks? If so we have a most complete organization ready to serve you. We buy, sell and exchange oil properties and oil stocks.

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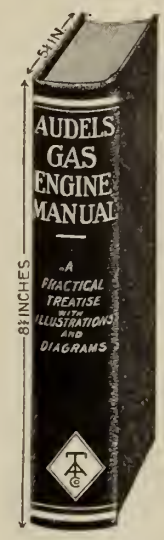

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William L. Gerstle, President San Francisco Chamber of Commerce, writes on COALINGA in this Issue.

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Vol. 2—No. 12 San Francisco, Cal., May, 1910 Price 20 Cents

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THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 2 | San Francisco, Cal., May, 1910 | No. 12

Visit of the San Francisco Chamber of Commerce Voted Great Success Members More Than Surprised by Marvelous Coalinga Field

By William L. Gerstle, President San Francisco Chamber of Commerce

(Written at the request of the Editor of the California Derrick.)

I think that only the very best results can be expected from the magnificent trip which the Chamber of Commerce and its guests took to the Coalinga oilfields last month. I know that personally, I was much enligbtened and benefited by knowledge of the remarkable trade resources wbich lie open to San Franciscans in that wonderful field.

When we started upon our trip, I had some idea of what we were about to see, but as tbe field has grown so large within such a short space of time I was entirely unprepared to take in what was shown us by our hospitable guests, and I dare say that a large number of those wbo made up the excursion were likewise astounded.

In a speech that night at a charming banquet, which was tendered us by our hosts, they requested information why San Francisco was not getting its sbare of trade. The gentleman wbo so kindly replied to the request for enlightment stated that our business men had not gone after the business as they should have, and that if they had they would have been as well patronized as our southern competitors. As every one knows, San Francisco has been under a terrible strain for the past four years and has done reconstruction work which to-day is the marvel of the world. In consequence would say that the business men of our city have had little time to hunt up or take care of new business—the home demand having taxed their every effort.

In studying this matter further, I found that the business which our southern competitors have been getting was chiefly oil well supplies, and it is easy to understand why this is so. The oil business started in Los Angeles, and the shops and business houses specialized in catering for this trade. As the business grew and new fields were discovered, they naturally followed up this business. But tbere are many lines outside of the special oil wells supplies which a community like Coalinga requires—groceries, clothing—general hardware and a thousand and one things of necessity and comfort which a prosperous city desires. I find that San Francisco has a very good trade in tbese lines. Our merchants are fully aware of its value, and mean to hold it. They have and will make every effort to increase this business.

The statement was made several times that our capitalists and business men did not appreciate the value of an investment in oil lands. The remarks were probably made without a great deal of thought or without looking over lists of stockholders. I can mention quite a number of San Francisco business men wbo have put a lot of money into Coalinga oil fields. For instance, the California Oil Fields, Limited, is a company promoted, financed and managed by tbe Balfour Guthrie Company, a San Francisco concern. It is true that tbe stock is held in England, but the project was originated in the San Francisco office of this corporation. Mr. William H. Crocker, Mr. George Cameron, and Mr. Well

WILLIAM L. GERSTLE
President San Francisco Chamber of Commerce

ington Gregg, Jr., are large owners of oil lands. Capt. Matson and Capt. Barneson have each done as much as anybody to develop oil. The Imperial Oil Company is also the owner of a great deal of acreage. They have spent a large sum of money in trying to find oil on their land but unfortunately did not meet with success in any of the four wells which they sunk. However, they are not discouraged and are confident that somewhere on their land they will find oil and propose to drill for it. The Mohawk and the Empire Companies have both, by the discovery of oil on their lands, done a great deal to improve a tremendous acreage, which was generally believed to be beyond the oil-bearing zone. These are only a few of the names which occurred to me off-hand. Judging by the number of transactions on our Oil Exchange, there must be a large number of San Franciscans in nearly all the companies.

The companies just named are all in the Coalinga field, but nearly all of these people and many others are owners in the other California fields. It is, therefore, not just to say that San Francisco men are not aware of the value of investments in oil lands.

Referring again to the business which we hope to get from Los Angeles, I wish to state that now that we have gotten over the effect of our fire, we shall go after the Coalinga business more than ever. In 1915 we will hold the greatest international exposition ever held in any city of the world, and expect the greatest prosperity not only in San Francisco but on the whole Pacific coast.

I wish to take this opportunity, which I neglected to do in my speech at Coalinga, to state that San Francisco has not forgotten the generous treatment which Coalinga accorded us four years ago when within eighteen minutes they raised $20,000.00 for our assistance. Actions of such a description are not forgotten in a minute or many years, and San Francisco will always cherish a feeling of gratitude towards Coalinga.

Certainly from what I saw on our trips to the oil fields I should say that Coalinga is one of the greatest oil fields in the world. I was more than glad to have gone, and, even if we should not return to Coalinga as an organization, I am sure that many of the men who participated in this enjoyable trip will visit Coalinga many times from now on as individuals.

(Signed) WILLIAM L. GERSTLE.

THE TRIP.

The 125 members and guests of the San Francisco Chamber of Commerce who, during the middle part of last month took a trip to Coalinga and were entertained there by the Coalinga Chamber, were more than surprised at the wonderful field operations which they witnessed, and upon returning, as well as at the banquet given them before they left the bustling oil center, they expressed themselves as much wiser and as deeply impressed with the remarkable scenes of oil activity which they had witnessed. To say that their trip was a great success, and most enjoyable, is almost superfluous. It was said that the guests were treated by their hosts "like visiting princes from a foreign country" and it is safe to conclude that a business "entente cordial" was entered into with relish by all parties concerned. The southern city certainly showed the Northerners what benefits the latter might have been enjoying if they had only had the time and enterprise to look for the same in the Coalinga oilfields.

An excellent program had been arranged for the entertainment of the guests. Placed on paper it appears as follows:

Early in morning Coalinga Chamber boards special train carrying visitors at Hanford.

9:00 A. M. Arrival of train in Coalinga.
9:10 A. M. Departure of automobiles for the field.
1:00 P. M. Barbecue luncheon on section 3.
2:30 P. M. Return to Coalinga and visit to shops.
5:00 P. M. Concert by Coalinga band.
6:00 P. M. Assembly of Pleasant Valley hotel.
7:00 P. M. Banquet at Arcade Rink. Address at conclusion.
1:00 A. M. Following morning, departure of train.

Following is the banquet program:

Toastmaster, Captain J. F. Lucy.
Address of Welcome.....Hon. Frank H. Short, Fresno
"Coalinga Chamber of Commerce and Coalinga City".....
.....Robt. Hays Smith, Coalinga
"Oil Fields of Coalinga".....Thos. A. O'Donnell
"Oil Transportation".....S. A. Guiberson, Jr.

There were several speeches by San Franciscans:

William L. Gerstle, Pres't. S. F. Chamber, replied in befitting terms to the Welcome Address.

"The Exposition in 1915," by Frank L. Brown, was a boost for San Francisco, which was well received.

James K. Lynch, Pres. S. F. Clearing House, also spoke. There were several other speakers, including General Peeler who talked about the Coalinga field, and Judge M. K. Harris who discussed his thirty-one years of experiences in Fresno county. Mr. Thomas A. O'Donnell made a speech which, says the Coalinga Record, "pobably did more actual good for the community than anything that happened during the day."

The banquet was in truth a most splendid affair. The table decorations were costly and beautiful. More than $2,800 had been subscribed for the entertainment by the Coalingans, and the lavishness of their hospitality can be imagined but not quite known except by those who participated in the affair. The table was waited upon by ladies of the town who kindly volunteered their services to make the final event of the entertainment a success. How well they succeeded in their object is illustrated by the fact that every speaker who arose complimented them. The banquet was most pleasing from both a business and pleasure point of view.

The train which brought the visitors was in the neighborhood of two hours late but the time was made up for by extra haste once they had arrived. The spin over the fields in autos was most refreshing. The new wells of the W. K. and Mohawk oil companies were seen as well as many others, including the K. T. & O. properties, Standard Oil, Cal., Oilfields, Lt., American Petroleum Co., Premier and other good properties belonging to Independents and big corporations. When the entertainment was finally at an end the party left for home by way of the coast line, arriving in San Francisco the afternoon following.

NEW COMPANY ENTERS CALIFORNIA TO ENGAGE IN FIGHT FOR SUPREMACY.

The Indian Oil Refining Company of Cincinnati, said to be the most powerful and aggressive rival of the Standard Oil in the Middle West, and which but a short time ago forced an entrance into the Southern field by taking over the Record Oil Company of New Orleans, concluded negotiations early in May by which it will enter the Midway fields. Details of the deal are not given out, but it is known that the Indian has secured a strong hold and will develop on a large scale. It is to do a manufacturing and export business with its own crude output.

Well-informed oil men say that this means the biggest trade fight ever seen in oil circles in the West, and one which will extend to every inch of the territory now controlled by the Standard, because the Indian, which has combatted the Rockefeller interests for years, has abundant capital and facilities.

An acre in Midway is worth a principality in Utopia. (Apologies to Macaulay.)

The Origin of Petroleum

(Continued)

By Paul Prutzman

Sub-formation and Movement.

To anyone who has traveled along the coast of the Pacific Ocean, no argument will be required to prove the assertion that the earth's crust, however solid and stable in appearance, is in reality in a state of constant movement. On every hand we find in the hills the evidences of marine life, and in many places, often at a considerable elevation, actual sea beaches, so lately raised that their characteristic appearance has not yet been destroyed by the elements. Evidences of subsidence, being usually buried in the ocean, are naturally but seldom found, but there are some cases at least of the works of man, of an age which in geological time is almost inappreciable, being now far beneath the surface of the sea.

By means of crumpling of tbe earth's surface, due to shrinkage of its mass, large areas of the surface are elevated while others are correspondingly depressed. For reasons which we cannot enter into here, these movements, while common to all parts of the earth's surface, are most manifest in the neighborhood of mountain ranges, in fact such ranges are but wrinkles or crumples on the surface, marking the lines of greatest weakness, and therefore the lines along which movements are most likely to be repeated. And as coast lines are very commonly fixed by the location of a mountain range, we usually find areas of disturbance in a belt of greater or less width parallelling the coast.

In areas where elevation is in progress, the mountains are being gradually raised to a greater height, while the formations lying on their flanks are being raised out of the ocean, if beneath its surface, and at the same time bent and tilted out of their original level. At the same time, however, that earth movements are raising the mountains, erosion, that is, the wearing effects of falling and running water, and to a lesser extent of sun, wind and frost, grinds the solid rocks to powder, scatters the debris of the mountain over the plain and carries the finer and lighter portions into the streams and finally to the ocean. It is thus quite possible for a mountain range to be actually rising, internally, while its level, as measured from surrounding objects, is diminishing, if conditions are such that the rate of erosion is greater than that of elevation, while a sea coast along which masses of clay and sand are being piled by the streams may either emerge from the water or sink to a greater depth, according as the speed of subsidence is less or greater than that of sedimentation.

Whether as cause or effect, it is an observed fact that those portions of the coast along which masses of sediment are forming are usually areas of subsidence, and therefore, so long as sediments are being washed down from the land, the formation of sedimentary rock masses continues. These masses in fact often reach a great thickness, several thousand feet of depth in an unbroken deposit being not uncommon, though the entire mass may have been laid down in very shallow water—there being forces at work, impossible to detail here, which tend to maintain the subsidence of the underlying rocks and the elevation by deposit of sand and clay, at a constant speed. The time ultimately comes, however, when the subsiding movement of the rocks is reversed, and the strata laid down beneath the ocean are raised into dry land.

The coarser particles brought down by the rivers sink close to shore, forming sand beds of varying thickness and grain: thick and coarse close to the mouths of the stream, and tapering off gradually to thinner and finer grained beds. The clays sink still farther out, while in deep water, far from the coast, only the lightest and finest sediment is left in suspension, to settle slowly into deposits of fine, soapy clay.

As we penetrate deeply beneath the surface of the earth, the temperature greatly increases. As the sedimentary beds accumulate thickness, and are carried by subsidence farther and farther below the surface, the lower portions of these beds are subjected to two influences: pressure due to the weight of the overlying strata, and a more or less elevated temperature due in part to the depth, in part to chemical reactions which are constantly taking place below the surface, and in some cases, due to being brought into contact with highly heated masses of volcanic rock. By these forces, profound changes are brought about in the rock masses. By pressure alone clays are consolidated into mudstones and shales. By pressure and a minor degree of heat, shales are hardened into slates. By pressure and the cementing action of fine clay, or of lime or iron deposited chemically, sand in its loose or incoherent form is changed to sandstone, and pebble beds to conglomerate. By a moderate degree of heat, clays and shales are burned to many different vitrified and brick-like rocks, known as a class as altered or metamorphic rocks. And by very high temperatures, any of the rocks may be melted, forming liquid or plastic masses, which if brought to the surface and rapidly cooled form finely crystallized rocks, classed broadly as lavas, or if cooled more slowly, beneath the surface, form the coarser granites, etc., which cannot be distinguished from corresponding rocks of the primary period.

Limestones are formed either by chemical action or by the action of marine organisms, and dolomites by chemical processes involving the presence of magnesia. Of the almost innumerable distinguishing rock names, and of the many minerals which in minute quantity, help to make up the earth's crust, it is impossible to speak. It is sufficient for the present purpose to remember that the great part of the rocks found on the surface and at depths of which we have any direct knowledge are of four kinds: igneous or fused rocks, either remains of the primary period of volcanic, metamorphic or altered rocks, which have been burned but not fused; sedimentary or unaltered rocks, such as clays, sands, shales and sandstones, formed by the settling of the debris of pulverized older rocks; and chemical deposits such as limestone and a host of the less common minerals.

To obtain any just idea of the action of these forces as bearing on the formation of coal and petroleum, it is necessary always to bear in mind that geologic forces operate with extreme slowness, so slowly, indeed, that they are in constant action around us without our being able to detect them at work in more than a few cases. Erosion, indeed, will often bring about noticeable results within a short time, and at very rare intervals the accumulated stresses of elevation and subsidence manifest themselves in an earthquake, with an attendant change of level at some point. But as a rule these forces work silently, piling up strata, and raising and lowering those already formed, by minute fractions of an inch, and the enormous rock masses of which our mountain ranges are made up required for their deposition and elevation the lapse of periods of time for which we have no adequate standard of comparison, and therefore no verbal expression. It is necessary to bear this fact clearly in mind, as any theory which will account for the accumulation of our petroleum deposits will assume the action of the assigned cause for a length of time which will require some little exercise of the imagination.

The surface of the globe being about three-fourths covered with water, and every portion of its habitable surface

being subject to more or less rainfall, it will be evident that beneath the surface there must be, at any point, a level below which the rocks are saturated with water. This permanent water plane is not at a constant distance from the surface, but ranges from a few feet to a considerable depth, according to the elevation of the surface above sea-level the presence or absence of large bodies of surface water, and the amount of rainfall. However, at any one point it is practically constant, and it may be taken as certain that at any point there is some certain depth, not subject to much variation, below which the rocks are at all times completely saturated with water.

This water zone, however, does not extend downward indefinitely. It seems practically certain that the crust or outside shell of the earth is everywhere underlain by a highly heated nucleus, whether liquid, as the older geologists taught, or rigid, as is now the more common belief. As the water of the permanent water zone penetrates downward, therefore, it meets at some distance or other below the surface a temperature above which it cannot exist as water, but only as steam, and it is therefore highly probable that below the water zone where there is a permanent steam zone, extending to an indefinite distance toward the center of the earth.

In both the upper or moderately dry zone, and the zone of permanent water below, there is reason to believe that the water is in a state of constant motion, due to variations in temperature, in rainfall and in evaporation. This should not be taken to mean motion in the sense that water moves on the surface, in streams and rivers, but motion through the substance of the rocks, extremely slow filtration through those of close grain, more rapid in those of a more open texture, and almost unimpeded flow in beds of loose sand. As all liquids will in their movements follow the lines of least resistance, the larger quantities of water will follow, so far as may be, the most open rocks, sands and gravels, but the fact that we cannot detect the circulation of water in the hard and close grained rocks should not be taken to prove that it does not move, slowly but constantly, through every part of their mass.

These conceptions, both of water and steam zones, and of the continuous movement of water through the rocks, are of much importance in explaining the origin and storage of petroleum.

Standard Sustains Large Loss by Fire.

A loss of about $150,000 was sustained by the Standard Oil Company when the oil in their great storage reservoir near San Pablo, on San Francisco Bay, took fire and burned fiercely until in the neighborhood of 170,000 barrels of Kern River oil had been consumed. The fire broke out about 2 A. M. on the morning of April 21st and for more than 24 hours all efforts to check it were unavailing. It was finally extinguished by natural action, the water cushion in the bottom of the reservoir being heated until steam was created and a force obtained thereby which caused the oil to boil over the top of the tanks. After the oil had boiled over, reducing the level of the oil in the reservoir, the air supply was diminished to such an extent that the fire was practically smothered.

Considerable loss was suffered by the Santa Fe Railroad Company, the Pacific States Telephone Company, and the Western Union and Postal Telegraph companies, all of whose properties in that region were subjected to the danger of the flames and burning oil to a greater or less extent. Santa Fe trains were held up for hours because of the great danger of passing the fire, and entered Richmond over other tracks.

The reservoir is one of the largest in California and is said to have cost not less than $50,000. It is twenty feet deep and has a capacity of 300,000 barrels. It is thought that the reservoir will be a total loss.

Immediately upon the discovery of the fire work was hurried to protect adjacent property. Wagons, scrapers and a great number of men were rushed to the scene of the conflagration. A dyke was thrown up all around the reservoir at a distance of about 1,000 feet from it, which later caught the major part of oil when it boiled over. All day long a huge column of smoke, visible for many miles, was wafted over the bay, and the flames could be seen flashing high in the air. The fire was the most spectacular seen in the neighborhood of San Francisco since the famous fire of 1906. No cause for its origin has been assigned as yet, but it is said that a spark from a passing locomotive or spontaneous combustion was in all probability the origin.

MARCH PRODUCTION, CONSUMPTION AND STORAGE FIGURES.

Following is a tabulated report of the production, consumption and storage of oil for March, 1910. It will be noticed that, on account of the enormous output of the Lakeview and other Midway gushers, and the new wells brought in in Coalinga, the W. K., Mohawk, California Oilfields, Ltd., and others, that instead of oil being steadily drawn from the stocks it has been steadily piling up at the rate of 11,069 barrels. It is probable that oil will continue to be stored, though probably not at the same rate, until there are further facilities for removing it to a market than are at present available. The true authorities are a unit in agreeing that the present condition is of the most temporary nature.

Field—	Wells Drilling	Wells Producing	Production
Kern River	48	1404	1,224,665
McKittrick	58	151	448,402
Midway	123	153	603,006
Sunset	47	109	626,439
Coalinga	145	624	1,603,902
Watsonville	1	4	4,960
Arroyo Grande	4	3	1,620
Lompoc	17	12	42,220
Santa Maria	47	134	538,710
Summerland	2	137	6,625
Santa Paula	31	248	40,730
Newhall	9	66	12,072
Salt Lake	25	237	281,303
Los Angeles		451	42,923
Whittier-Coyote	12	138	115,440
Puente	3	54	3,100
Fullerton-Brea Canyon	47	226	426,517
Salinas Valley	2	....	.....
	621	4151	6,022,624

Stocks and Consumption.

Stocks, February 28th, 1910.....19,225,940 Barrels
Production, March, 1910..... 6,022,624 Barrels

25,248,564 Barrels
Consumption, March 31st, 1910..... 5,679,479 Barrels

Stocks, March 31st, 1910.....19,569,085 Barrels

Daily Average.

Average daily production.....194,278 Barrels
Average daily consumption...183,209 Barrels

Average daily surplus.....11,069 Barrels

April Surpasses March.

The actual figures showing the production for April are not yet at hand but it is safe to say that it outstrips the amount produced in March. Probably no less than 6,500,000 barrels were produced during the last month.

Mr. Rockefeller's great project has met a freeze-out in Congress. The country is quiet. But had there been a raise of one cent on a gallon of oil: Whew!

Pipe Line Developments Assume Large Dimensions

Yancey Syndicate Plans Common Carrier—Southern Pacific Will Cross the Tehachapi—California-Arizona Company's Plans Are Further Given Out

Developments in the pipe line business within the last six weeks have been nothing short of astounding and with the organization of the Refining and Producing Oil Company, with a capital of $21,250,000 they have reached a climax which even the news of still another line across the Tehachapi pass could not detract from. The new company will produce, transport, refine and market oil in California and for that purpose has purchased the Oilport Refinery, heretofore known as the California Petroleum Refineries, Ltd., and 16,000 acres of land from the Alliance Oil Company, in the Santa Maria field, has acquired 1,000 acres of oil lands in the North Midway and McKittrick regions, and is now said to be actively engaged in the preparations necessary to build an eight-inch pipe line from the Sunset-Midway-McKittrick oil fields over the coast range to the newly acquired Oilport Refinery on the coast at San Luis Bay, which will be capable of handling 20,000 barrels of oil daily. For the first time in the history of the pipe line business in this State, a common carrier is planned. Whoso will, may transport his oil through the new pipe line, providing the oil is accessible. The fields to be tapped immediately will be: Midway, Maricopa, Sunset, McKittrick, Kern River, Santa Maria.

This remarkable project comes on top of the news of the California-Arizona Pipe Line Company's proposed new transportation line, and, like that company, has behind it very powerful backers. The new company was launched by J. C. Yancey, of Portland, Oregon, who recently visited New York, for the purpose, it was said, of forming a $50,000,000 corporation, a man well known in California through his association with Mr. Theodore Barnsdall in the purchasing of great tracts of oil lands in this State, and a daring operator and spectaculator in business.
in the purchasing of great tracts of oil lands in this State, and a daring operator and speculator in business.

With Mr. Yancey are associated, naturally, Mr. Theodore Barnsdall of Pittsburg, Pa., the millionaire gas king of the Middle West and who is also the largest individual oil producer in the country; Mr. Henry J. Crocker, the San Francisco banker and capitalist and J. L. Lamprecht of Cleveland, O. The latter is president of the National Refining Company of Cleveland, said to be one of the most formidable competitors of the Standard Oil Company in the United States. These four figures are powerful in the oil world—the more so because they but rarely give out anything of their plans. Their names loom big and their connection with any concern would seem almost to assure its success. The officers of the new company are: J. I. Lamprecht, President; Theo. N. Barnsdall, First Vice-president; Henry J. Crocker, Second Vice-president; J. C. Yancey, Third Vice-president and General Manager.

Patterned Similarly to Standard.

The taking over of the Oilport Refinery (the Cal. Petroleum Refineries, Ltd.), so that the company will be a refiner as well as a transporter, marketer and producer, places it as a miniature Standard Oil Company—that is, while it is ostensibly a pipe line concern, it engages in all other branches of the oil business.

Oilport Refinery One of Best in the World.

It is thought that the brains behind the company exhibited a decided stroke of business genius when they secured for it the Oilport Refinery. This refinery is one of the best equipped in the world and is without any cavil one of the most up-to-date and expensive in the State, not excepting the Standard's great plant. It has a guaranteed capacity of 20,000 barrels of oil a day, is equipped in duplicate, and is, according to Mr. Lamprecht, one of the finest in the world, he having been said to have declared it the very best he has ever seen. Alliance Oil Company had constructed a pipe line thirty miles in length, built to carry the oil from its producing wells in the Santa Maria field to the plant. Unfortunately, the former owners were never able to operate the refinery as they were unable to secure a sufficient supply of refining oil to justify the expense of operation. The thirty mile pipe line will be made a part of the larger system to be built from the west side fields to the refinery, and the coast, and as such is naturally a valuable asset to the new corporation. The Alliance Oil Company was a combination of the Crocker oil interests, which same are now merged with the Refining and Producing Oil Company.

Midway Holdings to be Developed.

Mr. Yancey is really one of the pioneers of the North Midway and McKittrick fields, coming to California a little more than a year ago with the firm determination of securing an oil empire. He recognized in the above fields a splendid place to secure valuable lands and, after extensive study of the west side regions, he is said to have obtained by lease and purchase, 26,000 acres of oil-bearing properties which to-day bear great promise of being all that he believed them. In this he was associated with Mr. Barnsdall and Mr. Drake, and presumably upon an equal basis. About 1,000 acres of this oil land will now be developed to the utmost, according to an interview which appears in the Bakersfield Oil Journal, held with Mr. Yancey the latter part of April. In this interview Mr. Yancey is credited with saying:

"We are preparing to put this pipe line project through immediately. I have been working on the proposition for some time past and last week, at a meeting in San Francisco, the organization was perfected. Mr. Lamprecht came out from the east and remained on the coast for about ten days, visiting the Santa Maria and Midway properties. He was delighted with the Oilport refinery and the Midway field looks good to him in every sense of the word.

"The Refining and Producing Oil Company is going to get into the game and we are going to win. We will do our part to uphold the price. We will be marketers as well as producers. Development work will be extended on our own property immediately."

A $4,000,000 bond issue has been authorized by the new company, which will go to purchase new tank steamers and build the pipe line as planned. It need hardly be said that the larger part of the issue was taken up by the members of the corporation and their business associates, who are men of means living in widely distributed parts of the country. Success of the company is generally predicted, and very much hoped also, as it will assure a larger and better market for oil producers in California.

Southern Pacific Pipe Line Will Reach Mojave After Scaling Tehachapi Pass.

It is definitely announced that the Southern Pacific and Santa Fe Railroads will build a new, rifled ten-inch pipe line from Kern River over the tortuous Tehachapi pass to Mojave, to supply both systems with fuel. This move, it is taken, is one of the results directly traceable to the inception of the California-Arizona Pipe Line Company project—a project which in vastness of conception has until the present rather dimmed all other pipe line projects in the West, gigantic though such might be. It is also said, however, that this new project of the S. P. has been in contemplation for a period of several months, the necessity for it being

very apparent when the fact is considered that the entire traffic of two transcontinental railroads leading through the San Joaquin Valley passes over this single track daily. It has been said that if, for any reason, there should be a thirty-six hour tie-up on this pass so that no oil could be transported in tank cars over it during that time, the two railroad systems dependent upon oil for fuel would be utterly demoralized. So great is the necessity for a pipe line. This pipe line will not be a common carrier, like the Yancey project, and its only object will be the stated one; to serve the railroads as a fuel carrier.

E. E. Adams, consulting engineer of the Harriman lines, is said to have reported favorably upon the project to the railroad. Mr. Adams has been identified with the pipe line activities of the S. P. since the first experiment on the Kern River bluffs, seven years ago, says a contemporary. While it is thought that the main pumping station will naturally be placed at Kern River, sub-pumping stations will be located every ten miles up the grade from Bakersfield to Summit, where the line will be carried through a tunnel and down. The estimated cost of construction is $2,000,000.

Plans of the California-Arizona Pipe Line Company.

Messrs. W. H. Workman and Louis Blankenhorn who were sent by the backers of the California-Arizona Pipe Line into the field which it proposes to invade, returned but recently to Los Angeles, where they made a report to the following effect:

That a total market for approximately 4,500,000 barrels of oil per year could be expected in the invaded country by January, 1911. This market could be looked for in Arizona and contributary territory in eleven mining centers and towns visited and other districts not canvassed, exclusive of consumption by the Southern Pacific, Santa Fe and subsidiary railroads.

They reported that about one quarter of the fuel oil now used in Arizona and "contributary territory" was supplied by Texas, the balance being transported in tank cars from California: and that the cost of fuel oil varied from $1.60 to $2.10 per barrel, which represents prices of from $0.65 to $0.85 for the oil and balance transportation. They found that coal was available from Gossan and Gallup, N. M., and that it cost from $6.50 to $8.00 per ton, lump, $4.00 for slack. Except at Nacozari, where regulations of the Mexican Government forbid the use of oil, no property of magnitude is using coal to any extent.

In regard to water power to be developed or already developed in the territory, they reported very unfavorably for water projects, declaring that there "was little water power possible of development and none at present developed except 3,600 horse-power at the Roosevelt dam." They reported that the Government Reclamation Service engineers found themselves unable to satisfy the applications for large blocks of power required by mining companies and that the companies would hesitate to enter into an agreement to accept the power from the Government as the power from the Roosevelt dam project will be turned over to a large body of farmers owning the irrigated lands in that district, in the future.

Arizona is reported by them as being a most favorable field upon which to embark the enterprise under consideration. The Mining Industry is pictured as experiencing a boom, and the necessity or rather the market for oil is apparent.

Their report concludes with the following paragraph: "We consider Arizona an unusually good field and just now an unusually thirsty one for California Oil." The gentlemen were sent on their mission to obtain all possible data on the fuel situation and the power situation in the territory.

A meeting of the directors of the corporation will be held in the near future and it is expected that officers will be elected then. No plans or hints as to who will hold office have as yet been made known.

The California-Arizona Pipe Line Company will transport oil for a distance of from 700 to 1,200 miles when fully completed. Starting from the Midway field it will cross the Tehachapi south of Bakersfield, will probably pass through Mojave, delivering oil at Barstow, San Bernardino, Bagdad, Ludlow, Rhyolite, Goldfield, Tonopah, etc. If the pipe line follows the old Santa Fe trail it will pass through Needles, where it will serve fuel to the smelter, ice plant, electric light works and other public service corporations. It will furnish fuel all the way along throughout the territory of Arizona, passing through all mining districts possible. There is really such an enormous market for oil in the Territory of Arizona and Sonora, Mexico, where the Greene-Cananea Copper works smelters are located, that enumerating a long string of names where the fuel will be used will not possibly give a better idea of the market than merely stating the broad fact that the market is there for Californians to seize. It is undoubtedly the truth that at the very least, within two years a market for 20,000 barrels of oil per day will be awaiting the enterprise of this great, interest-merging corporation —and probably 30,000 barrels daily would strike nearer the mark. In two years the line could pay for itself.—W. B.

REPORT ON AREA OF OIL DEPOSITS.

Former Geologist A. S. Scott has prepared a discussion of the anticlines of the Coast Ranges of California, which is as follows: The Coast Ranges of California consist of over three thousand miles of anticlinal ridges extending from the northern to the southern boundaries of the state. These anticlines usually have a northwest and southeast trend. Sometimes five or more anticlines run crudely parallel with one another.

At the time of their deposition beneath the sea, the sandstone and shale strata of the coast ranges were approximately horizontal, the anticlines forming the chains of mountains and hills of the coast ranges being only waves of upheaval caused by the compression of nether molten rocks through the contraction of the globe by secular cooling.

The nearly vertical fissures made in the strata by these waves of upheaval allowed the vapors of petroleum oil, natural gas and sulphurated hydrogen formed by the distillation of carbonaceous and bituminous substances to come up from a depth of 30,000 feet or more and condense in cooler strata under a cover of close textured rocks 1,000 or more feet in thickness where the rilers tapped them in the form of oil or gas. But where the bending of the strata was acute the fissures extended all the way to the surface, the oil and gas came up, the oil forming impure beds of asphaltum and the gas went off into the air as fast as made.

Some of the waves which had been uplifted to a great height were badly broken so that they were washed away exposing the burned rocks in which the oil and gas were distilled. These uplifts produced earthquakes of greater or less intensity, and only a small area of these anticlines has been rightly prospected for oil, and not more than seventy miles of these three thousand miles of anticlines have been developed.

JEWELL OIL COMPANY.

The Jewell Oil Company, formerly the Emerald at Kern River, section 25, 27-28, is drilling No. 9, which is 650 feet deep. U. S. Waugh, general manager of the company, is directing the work of shutting off the water in the two old wells, and he expects number three to be on the pump in a few days. It will require three or four weeks yet before number five is on the pump.—Bakersfield Oil Journal.

Why do we no longer hear the croak of the Oil City Derrick about "greatly over-estimated wells in California"? Alas, the facts have completely swamped their futile cry. We respectfully support Facts.

LARGE SALES ARE CONSUMMATED.

Imperial, Thirty-Three and Pinal Properties Are Sold to British Investors.

The Imperial Oil Company, consisting of 480 acres in section 25, 27-28, Kern River; The Thirty-Three Oil Company, consisting of 360 acres on section 33, Kern River, together with the personal holdings of J. J. Mack and J. M. Keith have been sold to English capitalists for a sum said to approximate $5,000,000. No one, so far, knows exactly what the properties brought but it is known that the sum secured was very high. These lands are generaly considered the "cream" of the oil lands in the Kern River field. They were sold by Mr. Mack, according to report, when he took a special trip to London for that purpose some time ago, the actual control of the properties passing into the hands of the purchasers from April 10th. The Coalinga holdings of the Imperial were not included in the deal. The Rothschilds are said to be behind the purchase.

There are 127 producing wells on the Imperial and Thirty-Three leases at present, with a production aggregating 2,000,000 barrels yearly. Only about two-thirds of the land has yet been drilled. The production of both leases is under contract to the Southern Pacific at the present time and the contract will not be fulfilled, probably, until sometime near the completion of next year. Nine years ago John M. Keith and J. J. Mack purchased the properties of the Imperial and Thirty-Three leases from the Southern Pacific Railroad Company for $2.50 per acre. Since then, to date, these leases have paid just about, if not a trifle over $4,000 per acre in dividends. The Imperial has paid sixty-eight dividends, aggregating $2,000,000; the Thirty-Three has paid fifty-eight, aggregating $670,000. Both companies were capitalized for 100,000 shares, par value, $5. The stock was very closely held, being largely in the hands of John M. Keith, J. J. Mack and L. Guggenheim of San Francisco. To show the relation of the companies it is only necessary to give the names of the management: J. J. Mack, president of the Imperial and vice-president of the Thirty-Three; L. Guggenheim, president of the Thirty-Three and vice-president of the Imperial. The personal holdings of Messrs. Keith and Mack are not included in the deal. Mr. Keith is said to have affirmed the statement that the transaction is the largest sale yet consummated in California in which active, producing oil companies have changed hands.

The name adopted by the new company is the Kern River Oilfields of California, Ltd. It is announced that W. S. Boggs, superintendent of the new British concern, will remain as manager. Mr. Boggs is also superintendent of the Coalinga Eight Oil Company, of which Mr. Keith is said to be the largest owner. Mr. J. J. Mack will act on the advisory board of the company for a time.

The sale of the very valuable Pinal properties in Santa Maria has also been negotiated, although whether to the same company is not known. A payment has been made on the Pinal already, to clinch tbe sale, which is said to have been for $1,500,000.

What the British are doing in the oil-fields of this State is evident to anyone. They are investing very heavily. No sooner had the news been made common that the Pinal, the Imperial and Thirty-Three properties had been sold than it was announced that the Gypsy Oil Company in the Midway field had been purchased by English capital through C. B. Wisner of the British Consolidated Oil Company of Coalinga, a company known as well as the California Oilfields, Ltd., also owned by the progressive British. The properties of the Gypsy Oil Company comprises 200 acres of excellent oil lands in sections 22 and 23, 32-23, Midway. On four quarter sections four wells of tbis company are producing 500 barrels of oil per day. There are rumors that this company will go to form a holding company which will not develop until the gushers of the Midway district have either ceased to flow at their present rate or a new outlet for their production has been guaranteed. The British are actively engaged in obtaining all the good producing properties wbich they possibly can get. It is said that larger backers are behind this series of deals than is dreamed of in this part of the country and it was even rumored than the British Government might be interested in obtaining oil producing lands which would guarantee a supply for their navy in case they could not purchase elsewhere at a reasonable figure. English money looms big on the oil horizon at present.

CALIFORNIA'S PETROLEUM DEPOSITS GIVEN AS ONE-THIRD OF ENTIRE PETROLEUM RESOURCES LEFT IN UNITED STATES: PLACED AT 8,500,000,000 BARRELS.

Mr. Ralph Arnold, probably the most wisely conservative of all geologists who have made estimates on the oil deposits of California, and who is now in charge of the petroleum investigations which the United States Geological Survey is conducting in this state, has made careful measurements of the different fields in California and estimates from his data that there are deposited in them no less than 8,500,000,000 barrels of petroleum. This is more than one-third of the entire amount of oil now stored in the ground in the United States. As estimated by experts of the Geological Survey, the different fields of the country are now believed to contain: (California excepted here.)

	Barrels.
Appalachian field	5,000,000,000
Illinois field	1,000,000,000
Lima, Ind., field	3,000,000,000
Mid-Continent field	1,000,000,000
Gulf field	1,000,000,000
Minor fields	5,000,000,000

Of the petroleum deposits in California Mr. Arnold estimates that probably not more than one-third will be obtained for use by mankind. This amount, roughly three billions of barrels, while not seeming of great size to the lay mind, says a contemporary, is nevertheless too enormous to comprehend unless a few figures are given to illustrate the space it would occupy. It is interesting to note by the figures given that a train of average tank cars, each holding 225 barrels of oil, would require no less than 13,333,333 cars to hold the available oil and that this number of cars would make up a train 31,000 miles in length, or, one which would stretch one and one-third times about the world at its equator. The Derrick does not however vouch for the absolute correctness of these figures.

THE CALIFORNIA STOCK AND OIL EXCHANGE TO BE MERGED WITH SAN FRANCISCO STOCK AND EXCHANGE BOARD.

Authority has been delegated to the governing board of the California Stock and Oil Exchange to arrange a merger of that institution with the San Francisco Stock and Exchange Board, and the negotiations for the consolidation of the two exchanges are expected to be concluded within a few days. A majority of the members of each institution has autboized the merger and the details of the consolida- are now being arranged.

The exchanges occupy adjacent buildings on Bush street and a number of brokers hold membership in both bodies. The active membership in each numbers about eighty-six.

The San Francisco Stock and Exchange Board, as a preliminary step to the consolidation, has voted to increase the limit of its membership frrom 100 to 200, it being proposed that the members of the Stock and Oil Exchange be received into membership by the Stock and Exchange Board on condition that those who are not already members of the latter board pay into its treasury $500 each, as the mining exchange now has in its treasury about $10,000.

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THE PICKETT LAND BILL.

Be It Enacted by the Senate and House of Representatives:

That the president be, and he hereby is, authorized to withdraw from location, settlement, filing and entry, areas of public lands in the United States and the District of Alaska, for public uses or for examination and classification to determine their character and value and the president is further authorized, when in his judgment public interest requires it, to withdraw from location, settlement, filing and entry, areas of public lands in the District of Alaska, whether classified or not, and submit to Congress recommendations as to legislation respecting the land so withdrawn.

Sec. 2. That the secretary of the interior shall report all withdrawals made under the provisions of this act to Congress at the beginning of its next regular session after date of withdrawals, specifying the purpose of each thereof. **All withdrawals heretofore made and now existing are hereby ratified and confirmed as if originally made under this act.**

All withdrawals shall remain in force until revoked by the president or by Congress.

The following is a substitute bill offered by Senator Smoot in place of the Pickett bill:

That the president may, at any time in his discretion, temporarily withdraw from settlement, location, sale or entry any of the public lands of the United States and reserve the same for water power sites, irrigation, classification of lands, or other public purposes, to be specified in the orders of withdrawals and reservations shall remain in force until revoked by him or by an act of Congress; provided, that all lands withdrawn under the provisions of this act shall at all times be opened to exploration, discovery, occupation and purchase, under the mining laws of the United States, so far as the same apply to minerals other than coal, oil, gas and phosphates. The secretary of the interior shall report all such withdrawals to Congress at the beginning of its next regular session after the date of the withdrawals.

COALINGA PROTESTS AGAINST PICKETT BILL.

The following resolution was uninanimously adopted at a mass meeting of citizens of Coalinga on Saturday afternoon, April 30th:

Whereas, There is now pending before the Congress of the United States certain legislation vitally affecting the interests of not only the producer of oil, but of the consumers as well, and therefore every industrial enterprise on the Pacific Coast, and

Whereas, The proposed legislation known as the Pickett bill and purporting to conserve the resources of the oil lands of California, is based on erroneous principles of conservation, and

Whereas, The small operators and developers of wealth of the national domain and the affected industries desire to be heard by Congress and present their views prior to the enactment of the proposed legislation, now, therefore, be it

Resolved, That it is the sense of this meeting of the citizens of Coalinga, in mass meeting assembled, that we are not adverse to any law withdrawing public oil land from public entry, provided that such withdrawal is for the public benefit, and not thereby creating a monopoly of the oil business for the benefit of a few large interests by permitting them to continue pumping and removing the oil, thus exhausting the Federal pools at both the Government and prospective small operators' expense. That we are unalterably opposed to any law that is retroactive and which does not recognize the rights of locators of oil lands who located prior to September 27, 1909, who have complied with the usual rules and customs of miners in protecting their locations made prior thereto.

That any other treatment of these men at the hands of the general Government will spell ruin to many vested rights and would produce chaos upon hundreds of operating companies who have relied upon the good faith and spirit of fair play by the United States.

Resolved, That a copy of this resolution be forwarded to the President of the United States, the Senate and House Public Lands Committees and to every member of the Senate and Congress of the United States and to the honorable Secretary of the Interior at Washington, D. C.

The alarm felt by the Coalingans that the land bills now pending in Congress, authorizing the withdrawal of oil lands and ratifying the withdrawals heretofore made, was so very general in all the Kern county oil fields that mass meetings similar to that held at Coalinga were called in Bakersfield and Los Angeles also and resolutions were adopted at these meetings which were wired to the President, the House and the Senate, Committees on Public Lands, the Secretary of the Interior and various members of both houses of Congress. In addition, a delegation of the foremost oil men in the State left California on the sixth inst. to work against the passage of a bill deemed so inimical to the general independent oil interests at the Capitol. Hundreds of personal telegrams were sent by oil men to members of both houses of Congress, protesting against the passage of the act and a large petition and subscription list was circulated throughout the fields to raise funds to carry on a fight against the bill. The whole idea of this legislation favors the big interests of the Southern Pacific and should it be passed, it will work havoc with literally hundreds of small oil men. Judge Curtis H. Lindley, president of the San Francisco Bar Association and one of the foremost oil and mining attorneys in the United States, has made a speech in which he declared in substance that conservation in relation to California oil does not conserve but that it merely turns over the oil output of the State to the interests of the Southern Pacific and Standard Oil Companies. His speech, while of a very judicial and reserved nature, nevertheless scored the pending legislation severely. It created tremendous excitement and has been quoted in full in almost every oil journal and magazine in the State.

LOS ANGELES CHAMBER OF MINES AND OIL DOES GOOD WORK TO PREVENT PASSAGE OF PICKETT BILL.

A mass meeting was held in Los Angeles on the fourth of the month at which a resolution was unanimously adopted protesting against the passage by the United States Senate of the Pickett Bill, regarding mineral lands withdrawals, the Los Angeles Chamber of Mines and Oil planning the meeting. Telegrams were sent to California's Senators and Congressmen requesting them to delay the proposed legislation.

The delegation which went to the Capitol consisted of the following oil men: T. A. O'Donnell, S. A. Guiberson, Jr., Capt. John Barneson, L. H. Andrews, Ralph Arnold, United States Geologist, H. H. Welch, S. A. Morsehead, Timothy Spellacy and W. W. Orcutt.

We respectfully call the attention of oil men to the meeting of the American Chemical Society which takes place in San Francisco, in July. Those who have been so greatly benefited by the labors of the chemist as have the oil fraternity, ought to be grateful for a chance to show their appreciation by a donation of substantial proportions to aid in entertaining guests.

TEXT OF THE BALLINGER—SMOOT OIL LAND ENTRY LAW: CREATES GENERAL DISSATISFACTION.

Below is a text of the Ballinger—Smoot Oil Land Entry Law, which has created such a storm of protest in oil circles. The general purpose of the law, as stated in the preamble, is to provide for the granting by the Secretary of the Interior, of permits to explore and prospect for oil and gas on unappropriated and withdrawn mineral lands:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the Secretary of the Interior is hereby authorized, under such regulations as he may prescribe, to grant to any person, association, or corporation qualified by law to acquire title to mineral lands of the United States, a permit to explore and prospect for oil or gas, or both, upon any land of the United States open to mineral exploration, including lands withdrawn pending legislation: Provided, however, that the lands covered by any such permit shall be in a compact body, not over four miles in extreme length, and shall not exceed one thousand two hundred and eighty acres, and no more than one permit shall at any time be held by any person, association, or corporation: Provided further, that no person who is a member or stockholder of any association or corporation which holds any permit, or extension or renewal thereof, nor any association or corporation any member or stockholder of which is the holder of any such permit or renewal or extension thereof, shall be qualified to apply for or hold a permit, or to apply for or hold any renewal or extension of a permit: Provided further, that the applicant shall at the time of filing original application pay to the register and receiver a fee equal to five cents per acre of the lands upon which permit to explore and prospect is sought.

Sec. 2. That each application for a permit hereunder, or for any extension of a permit, shall, in addition to any other showing which the Secretary of the Interior may by regulation prescribe, contain a declaration under oath that the permit is sought for the person, association, or corporation named therein on his or its own account, and not as the agent, employee, or representative of any other person, association, or corporation, and that such permit is sought with the intention of diligently proceeding to prospect and explore for oil and gas, or either, on lands described: Provided, that assignment of any such permit may be made to any qualified person, association, or corporation, but a certified copy of such assignment, together, with proof of the qualifications of the assignee, shall be filed in the local land office within thirty days after date of such assignment.

Sec. 3. That each permit so granted shall extend for a period of one year from the date of issuance thereof, and shall be exclusive during the term thereof as to the lands therein described, and shall only authorize the use of said lands for such exploration purposes.

Sec. 4. That the holder of any such permit shall, during the first ten months expend on the land at least one thousand dollars in prospecting and exploring for oil or gas, and in the event of failure so to do such permit shall not be extended, nor shall the holder thereof be qualified to apply or hold any other permit covering such land or any part thereof under this act.

Sec. 5. That such permit may, upon proper application therefor, and upon proof that the expenditure has been made as required by section four of this act, be extended by the Secretary of the Interior for a period of the year beyond the date of expiration thereof, but no longer, and such extension shall only be granted upon the payment of one dollar per acre of the land covered by such extension and upon showing under oath that between the date of issuance of such permit and the date of the submission of application for renewal thereof, there has been expended at least two thousand dollars on the land to discover oil or gas, and that the provisions of this act and the regulations established hereunder have been fully complied with.

Sec. 6 That the granting of any permits as herein provided preference shall be given to persons, associations and corporations who have already commenced actual operations to discover oil or gas, but no such person, association, or corporation shall acquire the right to explore or prospect for or continue or resume former efforts to discover oil or gas on more than one thousand two hundred and eighty acres of land, or such smaller area as the Secretary of the Interior may designate: Provided, however, that no person, association, or corporation who has commenced such operations on any land subsequent to the withdrawal thereof as oil or gas land shall receive such preference.

Sec. 7. That upon the discovery of oil or gas in any lands covered by any such permit, the holder thereof may proceed, under and pursuant to any law which may then be in force and effect, to acquire title to, or the right to extract oil or gas from, the lands therein described to the quantity or area permitted by law.

Sec. 8 That no right or privilege shall be initiated or secured for the acquisition of oil or gas land except through a permit as herein authorized.

From the Petroleum Review.

With each passing week the oil boom continues to increase in its sphere of activity, until to-day it is safe to say that almost every known petroleum field in the world is commanding the attention of the British capitalist. For many years past we are aware that the claims of genuine petroleum enterprises have not received that whole-hearted support to which they have been entitled, but now the trend of events proves conclusively that we are upon the eve—so far as this country is concerned—of the greatest oil boom ever known. From what we have just said, it will be clear that we do not fall in line with that opinion freely expressed in the daily press that a few months will see oil enterprises drop back to that position of minor importance which they have with but few exceptions occupied in the past. In fact, our inside knowledge of the present situation unmistakably teaches us that the future has greater things in store than the pages of history record. . . . . Surely, in this age of progress where there is every reason why the present boom in oil, especially in this country, should not only continue but increase in its weighty proportions as time goes on." The oil boom, needless to say, is world-wide, and the words of The Review's editor, Mr. Dvorkovitz, but illustrate that fact.

AGENCIES POSTPONE CONSOLIDATION.

The consolidation of the Independent Oil Producers' Agencies and the Coalinga Oil Producers' Agency, scheduled to take place on the 15th of May, has been postponed indefinitely, although the Oil World says that the date is set for May, 18th. The closed door policy takes effect from the time the agencies become one. Reason for the delay is ascribed by some to the trip taken by L. P. St. Clair into the Northwest, where he is said to be seeking further oil markets, the trips of several prominent members of the agencies at Washington, and lack of ability to complete arrangements by date first set for final consolidation. The Coalinga Agency was to have been voted into the Independent Oil Producers' Agency of Bakersfield on the fourth of the month.

The Producers' Transportation Company has appointed Superintendent L. H. Corey to the office of general purchasing agent of the company, a newly created office. The announcement is made in Los Angeles that arrangements have been made for accommodations from banks to agency members on their oil, same to be extended immediately upon the merging of the agencies.

Some of the Foremost Scientists of the World. Will the Oil

The California Section of the American Chemical Society wishes

DR. WILDER D. BANCROFT

President of American Chemical Society. Professor of Chemistry, Cornell University. He will deliver one of the notable addresses to be given at the coming convention.

DR. WM. H. NICHOLS

President General Chemical Company. A millionaire who is also President of the World's Congress of Applied Chemistry.

DR. HENDRIK BAEKELAND

Research Chemist. He made a fortune b inventing "Velox" printing paper, ar electrical appliances. Holder of nume ous honors and medals.

For the first time in the history of that great institution, the American Chemical Society, numbering among its members practically all the foremost chemists of the present age, will hold its annual meeting west of the Rocky Mountains, San Francisco having been chosen as the fitting place for the members to convene. The convention will be at least 1,000 strong from present indications and may be far larger than that. As the society is composed of about 6,000 members, many of them living in foreign lands, this means that practically one member of six will be among those who journey across a continent or farther, as the case may be, to make the occasion a noteworthy one. The convention will be held with headquarters at the St. Francis Hotel, in this city, from the night of July 12th to July 16th, but the members will probably remain on the coast being entertained by their hosts for a period of two weeks, at least, at the conclusion of the meeting.

The American Chemical Society is the largest society in the world devoted to one science. Its membership includes practically every technical man of note in this country and many from abroad, as well as nearly every college professor in the United States who is engaged in teaching chemistry. The coming meeting is the 42d annual convention of the society and at it there will be a number of papers read and discussions entered into which will be of very great importance to the scientific world in particular and the rest of the world in general.

This being the first trip of the society to the West, the local section is anxious to accord the visitors the best entertainment possible, and, with the idea in view of showing them the regions in California of largest interest to the chemist, they are planning an excursion which shall cover the oil-fields of the San Joaquin Valley. This is contingent upon the fact that they secure the co-operation of the oil men to carry out the plan successfully. It is a tremendous undertaking, one that will require a great amount of money, an enormous outlay of time and untiring energy to bring it to a successful conclusion. There are only about 175 members of the society in California and the funds are necessarily limited. The California section of the American Chemical Society needs assistance from the oil men if their great project is to be carried out, and, needless to say, they deserve all the assistance which they can get. Coalinga has entertained the San Francisco and Los Angeles Chambers of Commerce lavishly. Will Coalinga not be willing to help bring over a thousand well-to-do men, chemists of note, some of whom are millionaires, and who as a class have made the refining industry possible? Will the oil man help? The local section believes that he will, and with that end in view takes this opportunity to tell him of the necessity for his support.

If there is to be any material help given the local section of the American Chemical Society in its entertainment of the visiting body, organized effort will be necessary. The active support of the Chamber of Commerce of Coalinga,

n Help Show Them the Oil Fields of the San Joaquin Valley?

g 1,000 Visiting Members to See the Petroleum Riches of California

DR. CHAS. L. PARSONS

ecretary American Chemical Society, known the world around as a chemist of brilliance. Head of Chemical Dept., New Hampshire College.

DR. HARVEY W. WILEY

Chief of the Bureau of Chemistry, U. S. Dep't. of Agriculture. The man, who, more than to any one other person, the country owes the enforcement of its pure food laws.

DR. W. R. WHITNEY

One of the most noted young chemists alive, who has gained great honor and wealth from his profession.

the Chamber of Commerce of Bakersfield, of Maricopa, McKittrick, Sunset, The Union Oil Company, The Associated Oil Company, the Standard Oil Company, the Producers' Transportation Company, and the Independent Agencies, with and including every independent operator in the State of California, is hereby requested for the entertainment of the distinguished guests who will visit the State during the middle and latter part of July.

In order to take the matter up effectively, correspondence should be begun at once with the following committees at the headquarters of the American Chemical Society in San Francisco, 331 Mills Building.:

Executive Committee.

Ralph A. Gould, Chairman.

S. W. Young, Felix Lengfeld, W. C. Blasdale, Frank T. Green, C. W. Beaver, A. A. Hanks, Arthur Lachman.

Excursion Committee.

Frank T. Green, Chairman.

Myer E. Jaffa, A. E. Starke, F. G. Cottrel, Harry East Miller, F. B. Beyer, W. C. Riddell.

Finance Committee.

Arthur Lachman, Chairman.

Ralph A. Gould, A. E. Starke, Harry East Miller, F. W. Searby, Arthur C. Bush, John H. Dawson, A. A. Hanks, Frederick W. Huber, Myer E. Jaffa.

The California Derrick, at the request of Mr. Ralph A. Gould, acting for the California section of the American Chemical Society, suggests that something be done to start preparations for the proposed trip through the oil fields. The good which can come from such an excursion is incalculable and it is a high tribute to the oil industry to name the oil-fields as the most interesting places in the State of California from a chemical viewpoint. It shows that the men who will care for the visitors are alive to opportunities; that they wish to promote the welfare of the State; and that they see no better way of doing so than by having the visiting party, which is an enormous one, journey over the route by which they came, to see the oil-fields.

Mr. Gould, in conferring with the editor of this magazine, said that he was doing all in his power to make the westward trip of the society a success, and concluded with the following:

"It is hoped to accord the visiting scientists an entertainment which will show them the possibilities of California which are now lying dormant, in the belief that much will come from their knowledge, thus gained, which will be to our own advantage as a State capable of intense development in a chemical way. Final arrangements for the entertainment of the guests have not been completed. The California Section believe that the industries of the State which are dependent on the laws of chemistry for existence will subscribe sufficient money for the proper entertainment of such a body of men as we will have with us and final plans for such entertainment cannot be fully developed until it is known what funds are available for the purpose."

MASCOT OIL COMPANY.

The Mascot Oil Company is going in for extensive development on section 26, 32-23, Midway. Timothy Spellacy, president of the company, who was in Taft a few days ago, completed arrangements to have eight new wells drilled on its own lease. There are now twenty-four wells on the section which run from 50,000 to 70,000 barrels a month. It is said to be the intention of the company to produce 100,000 barrels of oil per month, which they expect to accomplish with the eight new wells.—Bakersfield Oil Journal.

The Mining Review states that the Mascot was recently offered $1,500,000 for its properties but that the offer was refused.

AMERICAN OILFIELDS WILL ERECT NEW TANKS.

The American Oilfields Company, one of Mr. Doheney's creations, in section 36, 31-22, Midway, has finished four new wells which between them have a production large enough, with that of the other big wells of the company on this lease, to necessitate the erection of four additional 55,000-barrel storage tanks. With the four already constructed they will have a total tankage of 440,000 barrels in Midway, when the new tanks are completed. The new wells which came in were: Numbers 59, 73, 74, 79, all finished between 1,000 and 1,500 feet. They are located northwest of the Santa Fe gusher.

PRODUCERS' TRANSPORTATION COMPANY LETS CONTRACTS FOR STORAGE TANKS.

Contracts for the immediate construction of steel storage tanks, having a capacity of 1,250,000 barrels of oil, to be located on the west side oil fields of Kern, Coalinga and San Marguerita, with a pipe line station near the coast, have been awarded by the Producers' Transportation Company.

These tanks will cost about $250,000, and it is expected that the first of these will be completed and ready for the reception of oil within sixty days, and the entire contract, it is believed, will be finished within ninety days.

Storage facilities for about 500,000 barrels will be erected in the west side fields of the Kern district.

It is believed that the storage system will do away with all fear of overproduction, as the storage will be sufficient to handle the greater part of any surplus that may be produced. A system of negotiable storage certificates is being worked out.

The original plan of the company had been to erect tanks not of steel but of concrete. It was argued that concrete would be more lasting and at the time the plans were in the making, it would undoubtedly have been cheaper than steel tanks. There were other reasons why concrete was chosen, such as its ability to store heat and cold without appreciably changing the temperature of the contents of the tank, etc., but, with the drop in the prices of steel, it was argued that in case there was a desire to remove the tanks for any unforseen reason, a concrete tank would be an absolute loss, whereas the steel tank could easily be taken apart and reconstructed upon the site desired. The latter argument prevailed and steel was chosen.

KERN COUNTY TO HAVE PROTECTIVE ASSOCIATION.

The $1,200 contribution made by Kern county for use in combating the water evil is to be augmented by possibly as much as $5,000, says the Oil News and Digest. They add that the K. T. & O. Company (Southern Pacific) was kind enough to make a payment of $120 in advance, and other large companies are said to have entered their names to aid in the work. Another contemporary asks: What struck the S. P.?

STATISTICS OF INTEREST.

Below are given the annual output of California's oil regions for the last thirty-nine years, an approximate estimate of capital invested in the oil business in California, and a comparison of the gold and petroleum productions annually, since the year 1887. The set of figures go to show the marvelous gain of the oil industry in this State year by year.

Although oil was produced in 1870, it was not until 1896 that the annual output exceeded 1,000,000 barrels.

Year.	Barrels.	Value.
1870	3,600	$5,125
1871	5,200	7,370
1872	6,500	9,876
1873	7,200	10,920
1874	7,700	11,540
1875	8,400	12,000
1876	9,600	15,410
1877	12,750	18,140
1878	15,227	22,780
1879	19,858	29,672
1880	42,399	68,450
1881	99,862	130,678
1882	128,636	172,730
1883	142,857	207,540
1884	262,000	428,600
1885	325,000	613,920
1886	377,145	642,785
1887	678,572	1,357,144
1888	690,333	1,380,666
1889	303,220	368,048
1890	307,360	384,200
1891	323,600	401,264
1892	385,049	561,333
1893	470,179	608,692
1894	783,078	1,064,521
1895	1,245,339	1,000,235
1896	1,257,780	1,180,793
1897	1,911,569	1,918,269
1898	2,249,088	2,376,420
1899	2,677,875	2,660,793
1900	4,329,950	4,152,928
1901	8,754,500	7,487,600
1902	13,973,500	10,269,385
1903	24,337,828	16,521,400
1904	28,476,025	19,896,702
1905	35,671,000	23,381,150
1906	36,474,000	26,029,155
1907	38,265,200	28,708,750
1908	45,546,500	32,109,620
1909	56,982,070	33,000,000

Valuations are based on selling price at tide-water.

The amount of money invested in oil properties in California exclusive of land is roughly estimated at $113,000,000 apportioned as follows: Four thousand two hundred wells, $42,000,000; 2100 miles of pipe lines, $12,600,000; thirty-five tank steamers, $12,250,000; thirty-five refineries, $18,000,000; five hundred tank cars, $6,000,000; twenty million barrels of oil in storage, $10,000,000; field equipment, pumping machinery, etc., $12,250,000. The value of the land and the money sunk in wells that never paid would bring the total to a still more stupendous figure.

The ascendency of oil over gold is set forth in the following table which shows the value of the State's product year by year since 1887:

Year.	Oil.	Gold.
1887	$1,357,144	$13,588,614
1888	1,380,666	12,750,000
1889	368,048	11,212,913
1890	384,200	12,309,793
1891	401,264	12,728,689
1892	561,333	12,571,900

1893	608,092	12,422,811
1894	1,064,621	13,923,281
1895	1,000,235	15,334,317
1896	1,180,793	17,181,562
1897	1,918,269	15,871,401
1898	2,376,420	15,906,478
1899	2,660,793	15,336,031
1900	4,152,928	15,863,355
1901	2,961,102	16,989,044
1902	4,692,189	16,910,320
1903	7,313,271	16,471,264
1904	8,317,809	19,109,600
1905	9,007,820	19,197,043
1906	9,238,020	18,732,452
1907	16,783,943	16,727,928
1908	26,566,181	18,761,559
1909	*35,000,000	*20,000,000

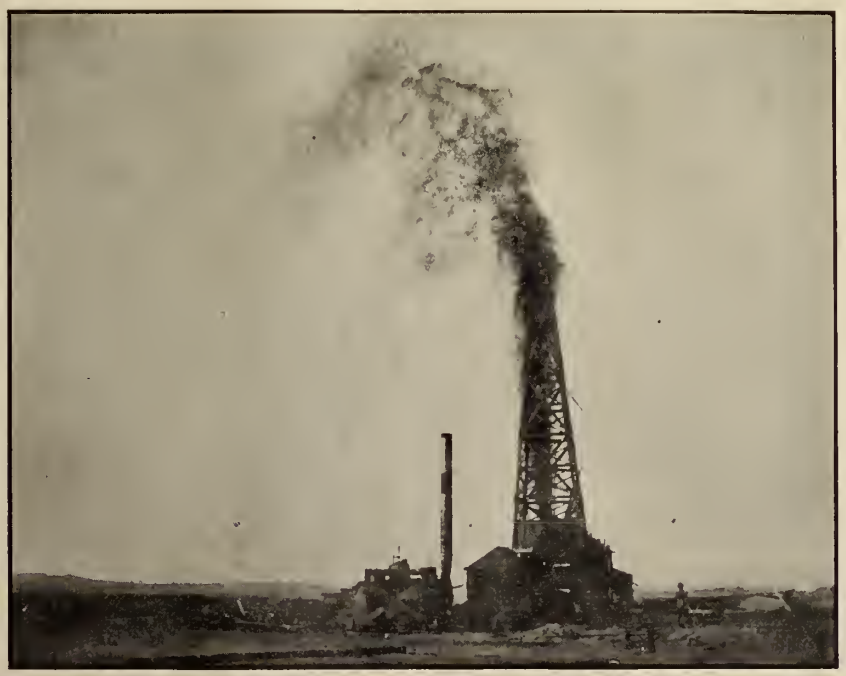
* Approximate.

was exhausted. This was an unfortunate performance as it put all oil journals in an undesirable position; they had printed the correspondent's news of a new gusher strike and had to retract. The Johnson was within 200 feet of the "gusher sand" at last knowledge. The La Belle has what appears to be an excellent well, the value of which is evidenced by the offer from British investors of $4,500 per acre for their entire holdings.

The world revolves on oiled cylinders and California furnishes the oil.

EAGLE CREEK IS LARGE WELL.

Eagle Creek No. 3, section 31, 31-23, Midway, is a very large well, and according to competent witnesses it has belched upon several occasions at no less a rate than 15,000 per day. The oil, on such occasions as the well has performed, has been lost, shooting away outside the sump. The well was finished at a depth of 1,400 feet and is one of the best in upper Midway. The flow of the well had a very decided effect on the Santa Fe "2-6" gusher in the next section, which for the time entirely stopped its flow, resuming same with great vigor when the Eagle Creek bridged over.



THE MAYS GUSHER IN ACTION. (Photo by R. H. Niclas)

As Can be Seen, this Well is Second Only to the Lakeview. The Pioneer Well, on the Same Section, is Said to be Fully as Large as the Mays. These Wells, However, Are Kept Under Control.

WELLS EXAGGERATED

The unverified report of several sensational strikes in North Midway, published in our last issue, proved to be somewhat exaggerated, although the Pioneer Midway is still thought to be as large as the May's well, located on the same section of land as the former. The Pioneer is estimated variously at 10,000 barrels, 15,000 barrels, 20,000 and even 30,000 barrels per day, when in action. We make no statement in regard to the actual size of this well, but it is a very large one indeed, possibly as large as the May's. The Santa Fe well, on section 25, 31-22 is estimated now at no more than 10,000 barrels per day. Some men have placed it at 12,000 barrels and some as low as 5,000. Probably the last named flow is nearest, at the present time. Surprise was a feature of the day on which the announcement was made that the Johnson Oil Company, in Sunset, near the Lady Washington and California King companies, had come in as a gusher—and later, that it had only struck a gas pocket which shot about 500 barrels of oil out of the well before it

F. B. Chapin of New York, who is heavily interested in the Mays Oil Company, has organized the Manhattan Midway Oil Company, the property of which is located in the same section as the Mays gusher in Midway. An allotment of 250,000 shares of stock was placed on the market and inside of twenty hours the whole amount was subscribed for fifty cents a share.

The Wall Street Journal is said to have stated that the S. P. Railroad Company controlled no less than 14,000,000 acres of land, the extent of the petroleum deposits on which are unknown to the company itself.

A COMPARATIVE RECORD OF THE TOTAL PETROLEUM PRODUCTION OF CALIFORNIA FOR YEARS 1907, 1908 AND 1909, SHOWING WELLS IN OPERATION.

Following is an approximated record by districts of all the oil produced in California's oilfields during the years 1909, 1908-1907, with the daily average. The valuation placed upon the total output is given as $35,000,000.

Production.

Producing Fields.	1909 Barrels	1908 Barrels	1907 Barrels
Kern River	15,393,980	13,746,570	12,830,000
McKittrick	4,862,628	2,078,700	1,564,000
Midway	4,148,874	1,312,500	1,108,000
Sunset	2,189,987	1,486,000	920,000
Coalinga	15,074,962	12,894,600	10,742,700
Watsonville	54,690	.....	.....
Arroyo Grande	22,310	6,700	4,500
Lompoc	568,814	428,120	384,500
Santa Maria	6,914,860	6,629,280	4,576,100
Summerland	69,284	115,200	100,000
Santa Paula	518,643	561,030	502,320
Newhall	134,760	91,170	72,680
Salt Lake	1,217,594	1,102,400	840,400
Los Angeles	2,553,060	2,062,800	2,010,000
Whittier-Coyote	965,728	827,312	738,530
Puente	35,620	40,618	36,477
Fullerton-Brea Canyon	2,115,836	1,984,300	1,700,000
Various	141,040	179,200	135,000
Totals	56,982,670	45,546,200	38,265,200
Average daily yield, barrels	156,117	124,702	104,836

Operation.

Districts	1909 Producing Wells	1908 Producing Wells	1907 Producing Wells
Kern River	1,324	926	708
McKittrick	134	136	102
Midway	119	42	28
Sunset	107	65	44
Coalinga	569	308	264
Watsonville	4	...	...
Arroyo Grande	3	10	6
Lompoc	16	13	10
Santa Maria	133	135	92
Summerland	112	144	127
Santa Paula	243	258	232
Newhall	70	74	54
Salt Lake	226	124	94
Los Angeles	450	248	220
Whittier-Coyote	134	95	79
Puente	54	23	16
Fullerton-Brea Canyon	221	172	156
Various	17	18	17
Totals	3,936	2,814	2,205

Disincorporates.

Reed Crude Oil Company has filed papers to disincorporate. Capitalized at $100,000. This company has paid $1,120,000 in dividends to date. Has sold all its Kern River property, will wind up business and remove stock from Los Angeles Exchange. Further plans not divulged.

The Texas Company has a contract to supply the Government something like 2,000,000 barrels of fuel oil for use by navy vessels, and shipments are being made by tank steamer from Port Arthur, Tex., to New York, where storage is provided by the Texas Company, the Government having as yet made no provision for storage.

UNITED STATES PETROLEUM EXPORTS FOR YEARS 1907, 1908 AND 1909, IN GALLONS.

Following are the total exports of crude petroleum and products from United States ports for the past three years, from United States Report:

	1909. Gallons.	1908. Gallons.	1907. Gallons.
January	125,048,003	107,322,016	87,981,293
February	91,719,956	116,140,370	102,828,152
March	139,433,675	122,363,300	93,439,670
April	141,999,696	118,900,738	108,265,855
May	117,477,777	140,940,632	93,827,835
June	140,208,288	135,950,594	106,397,356
July	126,868,782	150,661,620	120,160,435
August	127,384,137	137,039,628	128,737,365
September	156,441,251	144,481,214	108,856,386
October	133,499,602	143,221,807	110,837,732
November	139,028,685	104,530,658	115,222,160
December	117,652,880	125,830,184	109,105,840
Totals	1,571,103,373	1,547,405,401	1,294,659,979
Average	130,925,281	128,783,783	107,888,662

GENERAL NOTES.

It is said that work will be resumed on the El Cerrito well in the Devil's Den, although Capt. Barneson is reported to have stated that he had not much faith in the territory coming as productive oil land, as that term is now understood, but that he wishes to make a thorough test before abandoning it.

S. A. Johnson is reported to have sold 60 acres in the northwest quarter of section 24, 31-22, Midway, for $75,000, which is at the rate of $1,250.00 per acre, to W. S. Herring, and E. A. Nickerson, operators in the "Parkfield Territory," who have formed the Coalinga Midway and Coalinga Monterey Oil companies.

The Mylian Oil Company has its first well on section 36, 32-23, Midway, brought in at a depth of 900 feet.

Judge Van Nostrand has granted the petition of the National Oil, Coalinga Oil and Pacific Oil and Transportation companies to be dissolved, appointing W. E. Buck as trustee with bonds of $2,000,000; $200,300 and $100,000 for the respective companies.

It is said that oil has been seen in quantities on the surface of the ocean near Redondo. No reasons are either known or given for its appearance, although geologists say it is probable that some subterranean shock has loosed the oil from a subterranean bed, whence it found its way to the surface.

Oils rise to the top of troubled waters and so do oil men.

The Standard and Associated Oil companies should be given credit for their apparent indisposition to "break the market."

The Refining & Producing Oil Company is reported to have purchased 80 acres on the northwest quarter of section 32, 32-24, Maricopa, for $3,000 per acre. This same land was purchased some time back by San Francisco people for $1,500 per acre. Appreciation in value, $120,000.

The Ethel D. produced 48,000 barrels of oil from their four wells during March.

The Boston Petroleum Company, which began operations on section 20, 28-28, Kern River, on March 12, has completed five wells already. W. S. Boggs, formerly with the Imperial and Thirty-Three Oil Companies and who is also superintendent of the Coalinga Eight Oil Company, is manager of the Boston.

J. H. Abbott is suing the Bousts and associates, who own valuable oil lands including the Knob Hill Oil Company, for $10,000, for his services and for royalties, on an arrangement made with defendants, but which he claims have never been settled. The Bousts are behind the boomed "Boust City."

Reported by
Special Field Representatives
of the
California Derrick

COALINGA.

Coalinga produced 1,637,063 barrels of oil during March, 1910.

A fight is being made by stockholders of the Great Western Oil Company, which several months ago absorbed the West Coalinga Oil Company, section 12, 21-24, to gain control of the company. San Franciscans want to control but at present Fresnans hold the big interest.

A great deal of development is going on in the South field although no new wells are reported for the last few days.

The Premier has material on the ground for four new rigs.

Well No. 3, of the Good Luck Oil Company, has been put on the beam and is making 100 barrels per day. This well is located on section 22, 19-15.

Well No. 7 of the Arica Oil Company, section 7, 20-15, finished at 2,155 feet, is now making 200 barrels of oil per day.

The Shawmut Oil Company, section 12, 20-14, has brought in No. 7 which is now on the beam and making 150 barrels per day.

The New York-Coalinga Oil Company has completed No. 7 which is now on the beam, production not stated. New York-Coalinga is located on section 6, 20-15, a neighbor of the Section Six Oil Company, Silver Tip, etc.

The Arizona Petroleum Company, section 14, 20-14, has completed No. 6, which will be put on the beam immediately.

The Aztec Oil Company, section 7, 20-15, has completed well No. 1 which is making 100 barrels per day on the beam.

The Silver Tip Oil Company has rebuilt rig No. 2 which was destroyed by fire recently, and will proceed drilling.

Well No. 1 of the Pacific States Petroleum Company has been finished on section 6, 21-15 and has been making from 200 to 600 barrels of clean oil every day, with no water trouble.

The Mohawk gusher is still producing in excess of 1,000 barrels of oil daily.

W. K. No. 5 is producing at a very good rate an excellent refining oil. W. K. and Mohawk are in the same class.

Property to the value of $1,800 was sold for $1,440.20, in order to satisfy a debt against the Gem Oil Company of Coalinga. This is said to be the beginning of the end of the Gem.

The stockholders of the Coalinga Unity Oil Company have met and elected the following officers and directors: Pres., Dr. E. C. Galloway; vice-pres., H. R. Crozier; secretary, E. R. Walker; C. H. Woods and W. C. Fry complete the directorate.

K. T. & O. well No. 13., on section 13, 19-15, Coalinga, brought in on April 16, was reported good for 1,800 barrels daily.

The Castle Oil Company is the name of a company which will develop property on the S. W. quarter of section 4, 20-15, Coalinga. The company is capitalized for 600,000 shares at a par value of $1.00. Principal place of business is given as San Francisco. Officers and directors are: H. A. Whitley, Pres.; S. A. Guiberson, Jr., vice-president; B. H. Henderson, Sec.; J. O. Hickman, P. J. Muller, and S. J. Fay.

The derrick of well No. 2, of the Silver Tip of Coalinga (section 6, 21-15), was completely destroyed by fire a short time back. Loss, $5,000.

SANTA MARIA.

(Courtesy Santa Maria Graphic.)

Brookshire No. 9 is still gushing. The oil is of a very high gravity going 27.7, the lightest oil ever produced in the field. This showing proves that the oil in the lower strata is of a better quality than the field has been producing.

On the old tract of the New Pennsylvania the company has decided to deepen No. 3 to the same depth as No. 6, thus tapping the same strata of oil sand that is tapped by No. 6.

The new Pennsylvania on the Fugler Tract is down thirty-two hundred feet with eight-inch casing and everything working smooth. The drill has been for many feet in a very fine quality of oil sand, containing a high percentage of oil chrystals. It is probable that this well will be finished up and put on the beam in a very few days.

Dome No. 2 on the Blochman tract is now down about 2835.

Dome No. 2 in Cat Canyon is down 2800 feet with 8-inch casing and will probably be put on the beam next week.

Dome No. 1 on the same tract is down 2150 in a good formation and as the strata show up the same as neighboring wells the prospects for a good one are very bright.

Union Bell No. 1 is being cleaned out and deepened. This well has been a good producer but when the present work is finished its flow will be very greatly increased.

Union Bell No. 2 has become a flowing well and is now delivering the oil at the rate of over 200 barrels a day.

No. 4 in the Santa Maria field adjoining the Hartnell gusher has been cleaned out and become a good producer.

The Union Oil Company having all the oil it can handle in the Midway field has decided to temporarily cease operation on the Lompoc side of the Santa Maria field. The theory being that as it owns a great many acres on the Lompoc Anti-cline it can better afford to store the oil in the ground than in any other way.

The regular monthly meeting of the directors of the Brookshire Company was held recently at San Luis Obispo and the usual routine business transacted. The reports from the fields were most pleasing.

Union No. 34 on the Newlove lease has been put on the pump and is producing over three hundred a day of fine oil.

The West Oil Company has its well down over 3,100 feet and everything indicates that when this well comes in it will prove a good one. It should come in within a short time.

The Palmer Annex Oil Company filed notice of a change of its principal place of business from San Francisco to Los Angeles.

The Casmalia Ranch and Development Company which already has over two thousand acres near Casmalia has just secured a lease of twenty-five hundred acres on the Arellanas Ranch and will begin drilling operations at once.

The Summit Oil Company on the Witzen tract spudded in this week.

The Ideal Company is preparing to have two rigs running on its holdings at the mouth of Cat Canyon. The Ideal property adjoins the Los Alamos Petroleum tract and encouraged by the success of the Los Alamos well the directors of the Ideal propose to push the work along on lines that will secure a well.

Coblentz is down about 2,700 feet with 8-inch casing and everything shows for a good well.

L. A. Phillips formerly general manager of the Alliance Oil Co. has been appointed assistant general manager of the Producers and Refining Company, which recently purchased the big refinery at Oil Port.

The news comes from Palmer No. 2 that it is producing about 250 to 300 barrels of oil per day, apparently without the assistance of the pump. The well seems to be growing stronger every day and it would not be much of a surprise to those who know to have it come with a rush and a gush one of these days and be as big as its elder brother, Palmer No. 1.

The Santa Maria Marathon Company has selected the north half of the Tunnel tract in the Tepusquet as the ground upon which to begin operations.

Senator Perkins has sold the great Cuyama rancho, bordering on the corners of San Luis Obispo, Santa Barbara, Kern and Ventura counties to a syndicate for the sum of $500,000. There are 28,760 acres in the ranch.

This rancho lies to the westward of the Sunset-Maricopa oil fields and is known to show every indication of being oil bearing land; 8,000 acres of the ranch are proven oil lands and as the lands lie in range between the Santa Maria and the Maricopa fields it is fair to presume that they will be oil producers, and this will serve to confirm the belief of many that the oil belt extends without any serious break from the San Joaquin fields to the coast in vicinity of Lompoc.

Quite an interesting deal was closed up recently when the final payment was made on the lands held by Thomas Boyd of Santa Maria as trustee for a number of Santa Marians and the title to the lands passed over to the Rock Oil Company. The lands in question are located in the Midway field and adjoin those of Brookshire Company on the east. The consideration was one hundred thousand dollars. The Rock Oil Company will at once proceed to exploit the lands.

SUNSET-MIDWAY-McKITTRICK.

The Standard Oil Company has a new gusher on section 20, 32-24, Midway, which is being held under control at present time so that only about 800 barrels per day are being delivered. The well is about 3,000 feet deep with a strong gas pressure. Its location is about one mile northeast from the gushers on section 30. Two other good wells, on sections 18 and 28, are about ready to come in but are being held back until there are ample facilities to care for the oil. Standard's No. 4 is still gushing at a remarkable rate.

The Hillcrest Oil Company has been formed to operate in the Buena Vista Hills district, with a capital of $500,000.

K. T. & O., No. 26, at Maricopa, has come in at the rate of 1,000 barrels per day, and is keeping it up. This is their sixth completed well here.

Cresceus No. 7, on section 25, 32-23, is still producing at the rate of 150 barrels per day, according to Bakersfield Oil Journal.

The June Oil Company has entered the sand at a depth of 1,075 feet.

The United Oil Company will pay its first dividend in June.

The Producers' Oil Company, Guaranteed, has paid a dividend of $1 per share, all told, $80,000, to its stock-holders, who are mostly Fresno people. Frank H. Short and the Shepherd-Teague Company are the largest shareholders.

Well No. 2 on section 4, 32-23, belonging to the Santa Fe, will be drilled to a depth of 2,700 feet with a rotary. It is now down 1,060 feet.

The Mount Diablo Oil and Development Company, section 26, 32-23, on which are located the Mascot and other properties, has paid a $5,000 dividend, its first.

The Traders' Oil Company's well No. 71 is still averaging 300 barrels daily.

A great gas well has been brought in at a depth of 1,604 feet on 14, 32-24 Maricopa.

Well No. 79 of the American Oilfields, on 36, 31-32, 1,000 feet deep, is flowing 1,500 barrels of oil per day.

No. 2, of the Eagle Creek, section 31, 31-23, Maricopa, is still making 400 barrels per day.

It is said that the One Eleven Oil Company will install a rotary.

Water has been shut off in the Lady Washington with ten-inch casing at 1,600 feet.

The M. & M. section 36, 12-24, is very close to the Gusher sand with their well number 7 which they will continue drilling.

Ethel D. No. 7 struck a gas pocket at 700 feet which threw the tools out of the hole.

F. M. (Borax) Smith and J. M. Laymance of Oakland have purchased section 2, 32-23 in Midway, from the Pioneer Midway Oil Company and will develop at once, four rigs having been placed on the land for the erection of rigs and drilling of one well on each quarter section. With Messrs. Smith and Laymance are interested: J. F. Carlson, Walter Frick, and C. J. Berry, all of Oakland.

The Midway Six Oil Company has been organized by interests identified with the Los Angeles-Coalinga Syndicate, to operate ten acres in the center of section 6, 20-15, Coalinga, adjoining the Los Angeles-Coalinga Syndicate, Muriel and Shreves Oil Companies, on a twenty-year lease, at one-sixth royalty with perpetual production rights. The company is capitalized for $75,000.

Oil at Red Bluff and Bella Vista.

Messrs. D. W. Fuller and C. L. Cofer recently visited the office of the California Derrick and announced the fact that the Bella Vista Oil Company, fifteen miles from Redding, Shasta county, had gone down 700 feet and had good showings of oil with some gas pressure, but that the company would not stop drilling before 1,100 feet down, when they expect to get "a big well." The showing of oil at 700 feet was expected. The oil is light and Mr. Cofer said that the Standard Oil Company, which had investigated his claims and seen the oil sample, had proclaimed it worth as high as $4.50 per barrel at the well, if obtained in quantities. Mr. Cofer is president of the Bella Vista Oil Company, which takes its name from the town of Bella Vista, near which the company's property is situated.

The Beacon Oil and Gas Company, of which Mr. Cofer is vice-president, is located four miles from Red Bluff. It is down 230 feet with well number 1, which makes a very nice showing of light oil at present.

Both Mr. Cofer and Mr. Fuller are hard working oil men who have interested much local capital in their enterprises and they deserve all possible credit for their effort, inasmuch as it is possible that they will open a new, big, light, refining-oil field. Others have worked the north end of the State hard for oil, but without any marked success thus far. It is to be hoped that this time the real thing will be obtained in marketable quantities.

We can imagine the self-righteous feelings which those two Los Angeles newspapers must cherish after proclaiming that they would advertise no stock companies whose securities were not listed. But what about the acceptance of Campaign Funds?

Why fear an over-production? The navy officials won't use oil until they are assured of a sufficient supply; and besides, all the great companies disclaim any desire to break the market. One would think they were dead in love with high prices.

MONTHLY STATEMENT OF DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES TO APRIL 30, 1910.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Apr. 15, '10	.03	11,400	$ 171,000
Amalgamated	Mar. 15, '10	1.00	50,000	1,450,000
American Pet.	Apr. 1, '10	1.00	126,735	1,183,430.50
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated	Mar. 1, '07	1.50	446,055	1,548,368.55
Bay City	Feb. 10, '10	.20	20,000	90,000
Brookshire	Jan. 1, '10	.01	5,000	442,500
Caribou	Apr. 15, '10	.25	20,175.75	720,707.49
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Claremont	Apr. 28, '10	.02	10,000	335,000
Coalinga Pac	Dec. 23, '09	.10	6,500	107,250
Columbia	Apr. 25, '10	½&½c	9,992.62	284,789.49
Del Rey	May 15, '09	½c	3,927.50	11,782.50
Esperanza	Dec. 27, '09	.02	3,200	49,450
Euclid	Apr. 1, '10	.01	3,500	127,500
Four	Feb. 25, '10	.01	3,000	213,000
Globe	Apr. 1, '10	.01	6,000	87,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	Apr. 20, '10	.02	2,000	476,000
Homestake	Feb. 10, '10	.10	1,000	77,250
Illinois Crude	Apr. 1, '10	.01	2,000	90,000
Imperial	Jan. 6, '10	.60	60,000	1,940,000
Junction	June 1, '09	.01	2,500	20,000
Kern Oil	Nov. 19, '09	.22	22,000	42,000
Kern River	Apr. 1, '10	.10	2,000	102,000
Linda Vista	Mar. 5, '10	.01	3,838.50	72,931.50
Lucile	Dec. 20, '09	.10	2,670.44	42,727.04
Mascot	Feb. 20, '10	.01	5,000	5,000
Mexican Pet.	Apr. 1, '10	.01 1-3	85,616.70	3,562,960.24
Mecca	July 15, '09	.03	12,675	71,825
Monte Cristo	Apr. 26, '10	.10	50,000	440,000
Nevada Co.	Oct. 13, '08	.04	10,000	40,000
Palmer	Apr. 20, '10	.01	18,020.05	268,380.95
Paraffine	Apr. 15, '10	.01	3,000	18,000
Peerless	Sept. 20, '09	.06	6,000	801,000
Piedmont	Aug. 16, '09	.01	3,890	22,987.30
Pinal	Apr. 30, '10	.10	14,992	902,093.50
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Premier	Apr. 20, '10	.01	10,000	10,000
Record	Mar. 16, '10	.07½	7,500	55,000
Reed Crude	Dec. 28, '09	.12	12,000	1,124,000
Rice Ranch	Apr. 10, '10	.01	3,000	102,000
Royalty	Apr. 9, '10	.01½	300	15,766.66 2-3
S. F. & McK.	Apr. 1, '10	.30	15,000	355,000
Sauer Dough	Apr. 21, '10	.02½	4,987.50	522,291
Section 25	Apr. 26, '10	.25	10,000	20,000
Sesnon	Apr. 4, '10	.20	20,000	110,000
Silver T O Co.	Feb. 25, '10	.10	7,500	30,000
Sovereign	Apr. 15, '10	.01	5,000	95,000
Sterling	Mar. 15, '10	.12½	31,250	778,250
Superior	Feb. 12, '10	.01	5,000	57,500
S. W. & B.	Sept. 10, '09	.01	3,770	41,470
Thirty-Three	Apr. 6, '10	.20	20,000	690,000
Traders	Apr. 15, '10	1.00	14,960	194,146.50
Union	Apr. 20, '10	.50	124,813	6,493,068.15
United Pet.	Apr. 20, '10	.50	40,375.50	2,219,335.43
Wabash	Apr. 18, '10	.01	3,000	123,000
West Coast pfd.	Mar. 21, '10	2.00	20,816	83,264
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000

Total dividends paid to date.....$29,958,276.80 2-3

Total dividends paid by the above companies for April, 1910.....$710,368.12

LOS ANGELES QUOTATIONS.

Company.	Bid.	Asked.
Amalgamated Oil	.....	62.00
American Crude Oil Co.	.....	1.10
American Pet. Co. (pfd.)	.....	95.00
American Pet. Co. (com.)	.....	74.00
Associated Oil	51.50	.....
Brookshire Oil	1.50	2.00
California Midway Oil Co.	58½	.....
Central	1.95	2.10
Cleveland Oil Co.	46	.....
Columbia	1.20	1.30
Enos Oil Co.	1.45	.....
Euclid Oil Co.	55	75
Fullerton Oil	.....	4.00
Globe	.....	18
Jade Oil Co.	38½	45
Mexican Pet. Ltd. "Pfd."	67.62½	.....
Mexican Pet. Ltd. "Com."	26.75	27.62½
New Pennsyl. Pet. Co.	92½	.....
Olinda Land Co. (Oil)	54	.....
Palmer Oil Co.	1.25	.....
Perseus Oil Co.	.....	35
Pinal Oil Co.	.....	11.00
Reed Crude	40	.....
Rice Ranch Oil Co.	.....	1.10
Section Six Oil Co.	.....	50
Trader's Oil Co.	100.00	126.00
Union	106.87½	.....
Union Provident Co.	103.00	105.00
United Petroleum	108.00	.....
West Coast Oil Com.	9.00	.....
Western Union	60.00	94.00
NON-PRODUCERS.		
Coalinga Crude Oil Co.	.....	31
McKittrick Oper. Oil Co.	06½	19
Oleum Development Co.	08½	08½
Provident Midway Oil Co.	05	.....

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

Company.	Bid.	Asked.
Apollo	12	20
Associated Oil Stock	50.50	51.00
Bay City	2.00	.....
Blue Moon	26	27
Brookshire	1.85	2.00
California Oil & Gas	.....	2.00
Caribou	.....	18.50
Chicago Crude	11	.....
Claremont	1.82½	2.00
Coalinga Central	54	56
Cresceus	90	.....
Dabney	.....	10
Del Rey	14	.....
De Luxe	1.80	2.00
Empire	.....	2.75
Enos	1.40	.....
Four	16	.....
Fulton	.....	1.50
Graciosa	30	.....
Gypsy	.....	45
Illinois Crude	51	55
Imperial	21.00	29.00
Junction	50	.....
Mecca	.....	1.50
McKittrick	20	.....
Monte Cristo	3.25	3.50
Mountain Girl	18	.....
M. & M.	.....	75
Nevada Midway	25	.....
New Penn. Petroleum	98	1.00
Pacific States Petroleum	.....	65
Paraffine	.....	1.40
Palmer	1.27½	.....
Peerless	.....	5.00
Piedmont	15	18
Pinal	10.00	.....
Premier	1.27½	1.30
Record	.....	6.50
S. F. & McKittrick	20.00	28.00
Sauer Dough	1.90	2.00
Sesnon	8.00	.....
Shawmut	.....	50
Silver Tip	2.90	.....
Sovereign	.....	18
S. W. & B.	55	.....
Sterling	2.80	3.00
Turner	1.45	1.60
Wolverine	40	.....
W. K. Oil Co.	3.15	.....

The Acme Development Company, producing from 20 acres in the southwest quarter of section 29, 28-28, Kern River, has paid over $220,000 in dividends inside of three years, earning at the rate of $11,000 per acre in that time.

Fresnans have formed the Oak Shade Oil Company with a capital of 250,000 shares, par value of $1.

CONDENSED NEWS OF THE SAN JUAN, UTAH FIELDS.

There are so many reports on this field at the present time, owing to the boom in western oil lands, many of them contradictory, that a few words in regard to it will prohahly not come amiss.

It is claimed that this field is approximately 100 miles long and fifty miles wide, that there is a blanket formation with a dip to the north, and surface slopes to the northwest. Form indications and underground contour correspond well. There are twenty-two companies operating in the field at the present time. A spur of the Rio Grande Western has heen surveyed from Vance to Price, Utah, twenty miles of which has been laid, so that the railroad facilities are distant at the present time only about ten miles from the field of operations.

The Fairbanks Morse people of Salt Lake City have tested some of the oils produced in this region and pronounce it equal to 61 per cent gasoline. The Goodrich people have let a contract to sink two 2,000-foot holes for paraffine-hase oil. The Redwood Oil Company is at present very active in developing their holdings, consisting of 1,600 acres.

It is said that there are twenty-six wells in the field and no dry holes and that there are no less than eight distinct oil sands. Two pipe lines have heen surveyed into the field and it is connected with outside world by phone. The oil, when ohtained, is of the very highest gravity, same heing capable of consumption in lamps without refining.

The writer has seen a number of statements hostile to the interests of the field, which he is inclined to think come from men interested in oil companies outside the State.—C. T. R.

BAKERSFIELD OIL EXCHANGE NOW ORGANIZED AND DOING BUSINESS.

Plans for the Bakersfield Oil Stock Exchange, as mentioned in the last number of the California Derrick, have heen carried out with the result that the exchange has been formally organized with 100 charter members. Captain F. M. Schofield was elected president; W. H. Hill, of Barlow and Hill, vice president; B. A. Hayden, secretary and F. E. Mannel, treasurer. A Governing Board was formed with Joseph H. Hutchinson, formerly of Goldfield, as chairman. Members completing the make-up of the board are: J. C. Rohertson, Frank Lathrop, T. H. Minor, F. E. Mannel, W. H. Hill and B. A. Hayden. It has been agreed to sell 100 memberships at $50 each, later members to pay whatever seats will bring. The resolution giving the reasons for the forming of the exchange stated that Bakersfield was the center of oil activities and the natural site for a stock and securities exchange.

BALFOUR-GUTHRIE KERN PLANS.

The Balfour-Guthrie people are installing a hig pumping plant on the shore of Buena Vista Lake to supply water to their property in the Elks hills where development work is to he prosecuted on an extensive scale. A distributing system is to be huilt covering eight or ten miles of territory and pipe is already heing strung. The Balfour-Guthrie people have many sections of land in the new territory and they are already making extensive arrangements for drilling. Derricks are already being erected and a vast deal of material is being freighted into that section.

The Associated's ten-inch line from Coalinga to Port Costa is about completed. The eight-inch line from McKittrick, parallelling the Producers Transportation Company's line from McKittrick to the Devil's Den through the Templor country, not diverging at Junction hut keeping on to Coalinga to connect there with the Port Costa line, is progressing well.

The list of recent incorporations were unavoidably crowded out of tbis issue of the "Derrick," but will appear in our next.

BUICK OIL COMPANY FORMED.

D. D. Buick, head of the Buick Automobile Manufacturing Company of Flint, Mich., has formed the Buick Oil Company to develop holdings in the Midway and Maricopa-Sunset districts. It is said that work on his properties will be pushed ahead rapidly.

The Western Minerals Oil Company on section 25, 11-23, away out southeast of the old Sunset field boundaries, has made a strike. The Hazleton Crude, on section 17, is likewise reported to have excellent prospects of a hig well.

It 'is reported that the Standard Oil Company will build a great storage and distrihuting plant in Vallejo and that it is negotiating with Gladding-McBean & Co., of San Francisco, for a site for the prospective new plant.

A contemporary reports that the British Admiralty has determined to use more oil for fuel for the British navy; that much is being stored at present and that steps have been taken by the Admiralty to guarantee an adequate supply for future use. The authority for this statement is the Petroleum Review which cites Mr. McKenna, secretary of the British Navy, as their authority.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for The California Derrick hy J. M. Neshit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may he procured for 15 cents each:

Tubing and casing spear, C. M. Heeter, Butler, Pa., 956,345.

Well-pumping apparatus, C. M. Heeter, Butler, Pa., 956,346.

Rod elevator, G. B. Rogers, Bartlesville, Okla., 953,976.

Gearing, A. F. Clarke, Butler, Pa., assignor to T. W. Phillips Mfg. Co., same place, 954,169.

Drilling machine, J. P. Tye, Rochester, Tex., 954,230.

Working barrel for oil wells, W. H. Walker and W. H. McDevitt, Fenelton, Pa., 955,024.

Compressed air motor for pumps, D. R. Tripplehorn, Findlay, Ohio, 955,296.

Process of desulfurizing petroleum distillates, H. V. Walker, Brooklyn, N. Y., assignor to The Maas & Waldstein Co., Newark, N. J., 955,373.

Casing tongs, C. W. Stone, Hollywood, Cal., 955,560.

Well drilling machine, W. C. Stevens, Akron, Ohio, assignor to The Star Drilling Machine Co., same place, 955,612.

Olive-valve thread preserver, J. B. Oeink, Fulda, O., 955,987.

Pump valve, Charles Dickinson, Maricopa, Cal., 956,050.

Well screen, S. N. Hall, Houston, Tex., 956,080.

Rotary for well-tubing, S. N. Hall, Houston, Tex., 956,081.

Method of treating oil wells, A. P. Elten, New York, assignor to E. E. Burlingame, same place, 956,058.

The Standard is working on its new pipe line from Midway to Bakersfield, which parallels the old line laid two years ago. The growth of trade there and the necessity for transporting the immense amount of oil which it has signed up for in Midway, necessitated another pipe.

NEW OIL FIELDS

Operators, promoters—get into the San Juan, Utah, field with its paraffine base, 42 gravity oil, while it is being developed. Will sell any portion large tract along river; exposed oil sands—big seepage—this spells OPPORTUNITY.

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1000 shares Templor Ranch Oil Co.	Cheap
1000 shares La Blanc Oil Co.	.27½
1000 shares Hubbard Elliott Copper	.45
2000 shares Lady Washington Oil Co.	Wanted
1000 shares Landau Economic Syphone	Cheap
500 shares Liberty Oil Co.	Cheap
200 shares Yellowstone Oil Co.	Cheap
100 shares Coalinga Peerless Oil Co.	Cheap
20 shares Pacific Slopes Surety Co.	1.75

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1,000 Lady Washington Oil Co.	@	18
1,000 Calif. Pressed Brick Co.	@	22
1,000 shares Coalinga Crude Oil Co.	@	22
1,000 shares Templor Ranch Oil Co.	@	24
1,000 Ventura Oil Development Co.	@	10
500 shares Consolidated of Coalinga	@	15
500 shares Liberty Oil Co.	@	17
100 shares Four Oil Co.	@	24
10 shares Rio Michol Rubber	@	25 00

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180 Barrels Daily

Is the estimated capacity of two wells belonging to the Snelling Oil Company just completed of 29 gravity. Other near neighboring wells are owned by the Union Oil Company. That's good argument for this property. . . . . .

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